BPN
BUTANE-PROPANE News

A CHILTON PUBLICATION

JULY 1961

How the dealers view their industry

HEADQUARTERS FOR L.P. GAS INFORMATION SINCE 1931

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- ☐ **How to make a $2,000 investment produce like $10,000.**

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COMPANY_____

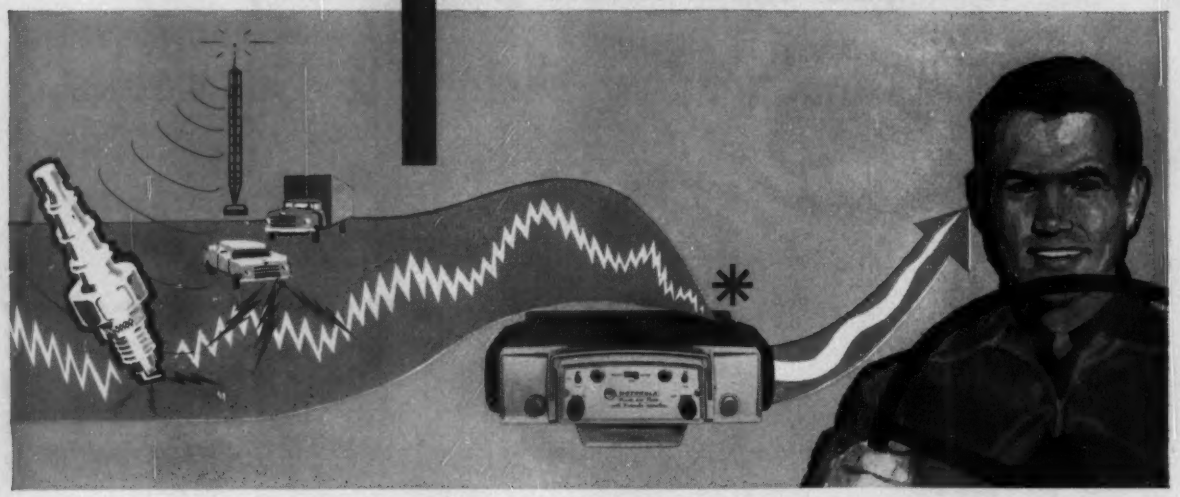
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MOTOROLA 2-WAY RADIO

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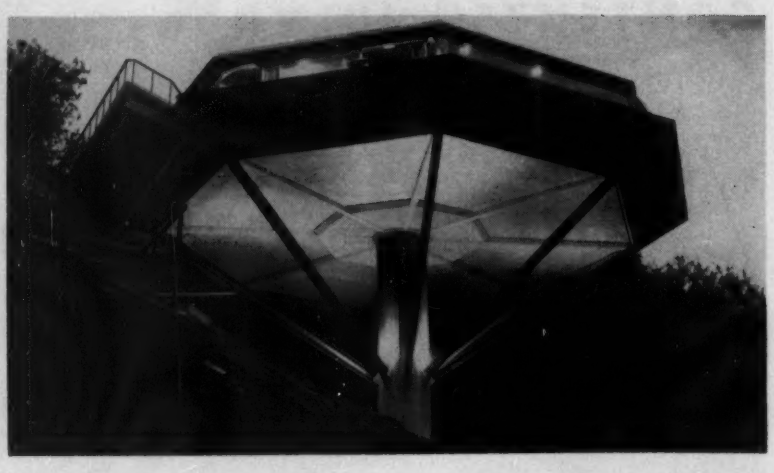
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BPA NBP

BEHIND THE SCENES



In orbit with an editor

"ELECTRICITY IS THE FUEL OF TOMORROW," they say, all night and all day. But farther out than this one, houses just don't get—without going into orbit. And this flying saucer son of a giant mushroom perched up in the Hollywood Hills is all-gas!

Called the Chemosphere House, the structure was jointly sponsored by Chem Seal Corporation of America and Southern California Gas Co.

Twice as big as the average house, this 2200-sq-ft, 60-ft-diameter octagon sits on a 5-ft-thick, 30-ft-high *hollow* concrete column.

"The basic idea of building the home on top of a concrete column was to provide a footing stable enough to withstand earthquakes, landslides, high winds, and other disturbances of man and nature."

That's what the news release supplied at the press showing said. But when your BPN editor was on the scene, he never really put all of his weight down. And when a group of six gathered on one edge of the living room to take in the 360-degree view, we did a hurried—(but diplomatic!) cocktail-party cha-cha to the fourth bedroom on the opposite side to help counterbalance the whole thing.

Another item that caused your Early American editor no small amount of concern was the paragraph about the house having virtually no nails, screws or bolts. Everything, it seems, is held together with Chem Seal chemical adhesives and sealants.

Of course, having to take a four-passenger cable car up to the house from the nearest bit of land flat enough to carve out a road—and that's 125 ft down—didn't help any either.

Exciting to the visitor from its Arkla all-year air-conditioning to its zestful, zany zoom-lines, this little project must have been just as exciting to the craftsmen who built it.

After getting back down to earth, we were no longer prepared to argue whether gas or electricity is the energy source of tomorrow. But we were betting our son's hastily borrowed space helmet that gas is the fuel they'll be using 100 years from tomorrow—the next time they get us up in that thing! ■

BACK TALK

Feature may lead to sale

Wixom, Mich.

We have read with interest the article, in your May issue, by J. Arthur Thompson, "A veterinarian's best friend is his LPG truck."

We would be greatly pleased to receive the address of the Winter-Weiss Co. of Denver, Colo., whom

300,000 miles of trouble free operation proves Mississippi Tank Transports best !



No matter how much gas a transport can haul, or how good it looks, the real payoff in profits comes only if the unit stays on the road and not in the shop! And while our transports are second to none in payload and appearance, reports from operators across the country prove that *they deliver more gas at less cost!*

Take the case of Ewing Transports, Inc., Memphis, Tenn. T. R. Ewing, president, says that their Mississippi Tank T-1 steel transport has traveled over 300,000 miles in the last 20 months and *required practically no maintenance!* In fact, the record is so good that Mr. Ewing recently added another Mississippi Tank Transport to his fleet.

There's no mystery about the ability of our transports to chalk up remarkable records of dependability. It's because Mississippi Tank folks—from the supervising engineers to the men who apply the last gleaming coat of paint—take pride in our equipment. And, of course, only quality components and materials are used throughout.

If you're in the market for T-1 transports that will render years of trouble-free service as well as haul top payloads, may we suggest you contact us today about your requirements?

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- **You sell under your own brand name, without competition from PURE.**

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PURE

Be sure with Pure

we understand outfitted and completed this truck. We are anxious to learn the name of the manufacturer or supplier of the four gallon capacity gas-fired water heater.

Your cooperation in assisting us in this instance will be greatly appreciated.

M. E. BOWEN
Bowen Water Heaters

Winter-Weiss Co. is located at 2210 Blake St., Denver, Colo. The water heater can be purchased from the Little Giant Manufacturing Co., 907 7th St., Orange, Texas.

"Energy" ads for re-use

Maryville, Mo.

We enjoyed reading "Energy Conversion" in your April issue.

We noted the ads which appeared in the article and are wondering if it would be possible for us to obtain mats or copies for insertion in our newspaper.

W. H. DEAMONT
Maryville LP Gas & Equipment

Dearmont's letter was forwarded to Southern California Gas Co. The company granted him permission to use the ads. Any others wishing to use the ads can write to Southern California Gas Co., 810 S. Flower St., L. A., Calif.

"Purging" revives memories

Joliet, Ill.

After reading Harris A. Goodwin's excellent article on tank purging in the May issue of BPN, I recalled a case where forklift cylinders could not be filled to capacity, due to lack of purging. We gave them a shot of vapor, turned them over "on their backs," blew them down twice, and they filled fine.

We also had trouble with 100-lb cylinders for liquid torch supply, with ⅛-in. dip tubes. The operator thought he had done a good job of purging. He had not inverted the cylinders, so the air was trapped.

He had tried for two hours to fill them to 100 lb of propane with a pump, and could not. We took four new cylinders from the supply pile, charged them with a few



you can't afford to...

A test pilot's calculated risk is frequently far less than the risk of trouble undertaken by LP-Gas operators who buy equipment "as good as RegO . . . but cheaper." Just *one* service call—(with its attendant expenses of gasoline, travel time, labor cost, parts replacement)—will usually rob you of all the *pennies* you might save on a *hundred* substitutes for RegO quality.

RegO equipment has *bonus features* built-in to eliminate risks. For instance, RegO Certimatic Regulator Assemblies feature body and bonnets of tough, corrosion-proof die-cast aluminum . . . a nylon handle in brass liner lasts indefinitely, won't break in freezing weather. Special diaphragms are built to last. They provide the same uniform regulation in SUB-ZERO winters as they do in desert heat.

RegO CertiMatic®

BOTTLE-GAS OUTFITS

Provides dependable two-stage regulation *and* operates as an automatic throwover manifold. Handles loads up to 568,000 BTU/hr (225CFH). Model 7519M (shown) includes remote Service and Reserve Indicator. Also available, Model 7519D with RegO *Prismatic* Indicator visible from 30 feet.



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LP-Gas Equipment
First... Foremost... Finest

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4201 West Peterson Avenue
Chicago 46, Illinois, Dept. 31-G

DOUBLE CAPACITY!



(Photo courtesy Fisher Governor Company)

PUMP 80 G.P.M.

INSTALL VIKING KK260U TRUCK PUMPS

Now you can step up your delivery of LP-Gas as much as 100%. This new pump can be operated up to 700 RPM and at a maximum differential pressure of 125 psi. With 2½-inch ports and the pump connected to sufficiently large inlet lines and fittings, this full rated capacity of 80 G.P.M. can be assured. New **VIKING** needle bearings in pump brackets make this speed possible.

Of course, **VIKING'S** many other cost-cutting features are included, too—our exclusive automatic pressure lubrication system for the idler bearing, leak-proof O-ring gaskets and **ROTO-RING** mechanical seals, return-to-tank valves and others. For full information, write for bulletin SP-527B.

VIKING PUMP COMPANY, Cedar Falls, Iowa, U.S.A. . . . In Canada, It's **"ROTO-KING"** Pumps. See Our File In Butane Propane Catalog.

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Back Talk

pounds of vapor and blew it off twice. We then changed the valves to install the dip tubes, and filled all four to capacity on four scales—in five minutes.

JOE PULLING
Drake Bottled Gas, Inc.

March issue motivates

Richmond, Va.

Without a doubt, the March issue of BPN is one of the finest I have ever read including all of the trade publications in our field.

The article on our electric competition was so good that it motivated us to prepare a brochure on combating electric competition.

We also used a great deal of the material in a special training course for our salesmen.

Congratulations again on a fine publication.

ROBERT E. LEITCH
Bottled Gas Corp. of Virginia

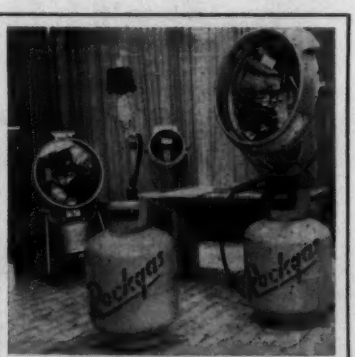
"Toward a better image"

Tulsa, Okla.

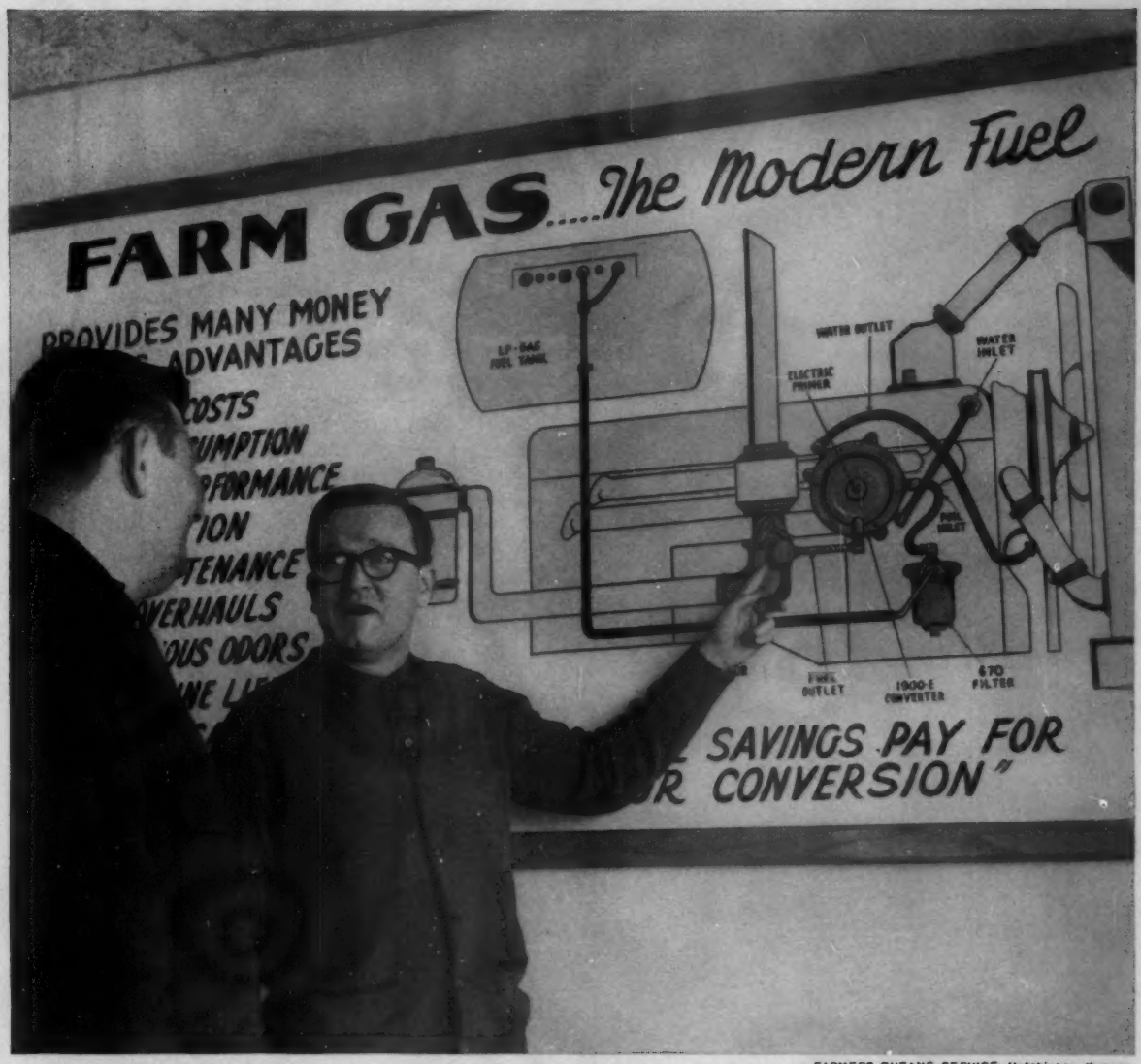
We would like permission to reprint your "Beyond the Mains" article entitled "Toward a better image" from the May issue.

We are especially interested in using it in our customer bulletin.

JIM PERRYMAN
Tuloma Gas Products



These portable propane floodlights made by Tilley Lamp Co. of London, England, were recently seen by 200,000 visitors at the B. C. International Trade Fair in Vancouver, B. C. The lights were used for illumination of night-time construction work on bridges and the Trans-Canada Highway in the Rocky Mountains of British Columbia.



FARMERS BUTANE SERVICE, Hutchinson, Kansas

Keeping one step ahead of the competition!

As you well know, that's not an easy thing to do in the fiercely competitive LP gas business. But Martin Burke, President of Farmers Butane, is doing just that. Above you see him explaining to an employee one of the many marketing strategies that helped this company attain its enviable position.

When farmers in the Hutchinson area wanted to modify their tractors to run on LP gas, Farmers Butane, instead of charging the usual large conversion fee, didn't even ask for a down payment! The tractor owner simply paid regular gasolene prices for the LP gas until the price differential paid for the conversion. They picked up approximately 400 additional tractor customers in this manner.

Farmers Butane has never used any other supplier but Cities Service. To get fast, dependable service and the very latest marketing advice on how *you* can stay one step ahead of the competition, simply contact your nearest Cities Service office.

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Deluxe Model V5131. Available with long or short element or tube, with or without pressure regulator.

The lure of Honeywell's quality reputation adds new appeal to your water heaters

Your sales message hits home quicker when you equip your water heater with Honeywell controls. Customers know that the name Honeywell means quality —the kind of quality they can depend on. You and your customers will find it's only natural that the maker of the world's finest thermostats also makes the world's finest water heater controls.

- **Top-mounted setting** of both temperature and gas cocks gives greater convenience, eliminates stooping and squatting.
- **Built-in pressure regulator,** properly located in gas stream (models available without pressure regulator).
- **Safe-lighting interlock** prevents accidental turning of gas cock to off position once it has been put in pilot position. Pilot can be cocked only in pilot position of knob.
- **Universal Duofilt filter** resists clogging by both dust and gum, works on all gases. AGA listed. Included at no extra cost.

Get complete information on Honeywell's quality line of water heater controls by calling your local Honeywell office. Or, write: Honeywell, Minneapolis, Minnesota.

pushing the name Honeywell!



Newly styled standard Model V8128 . . . Choice of long or short elements . . . with or without pressure regulator.

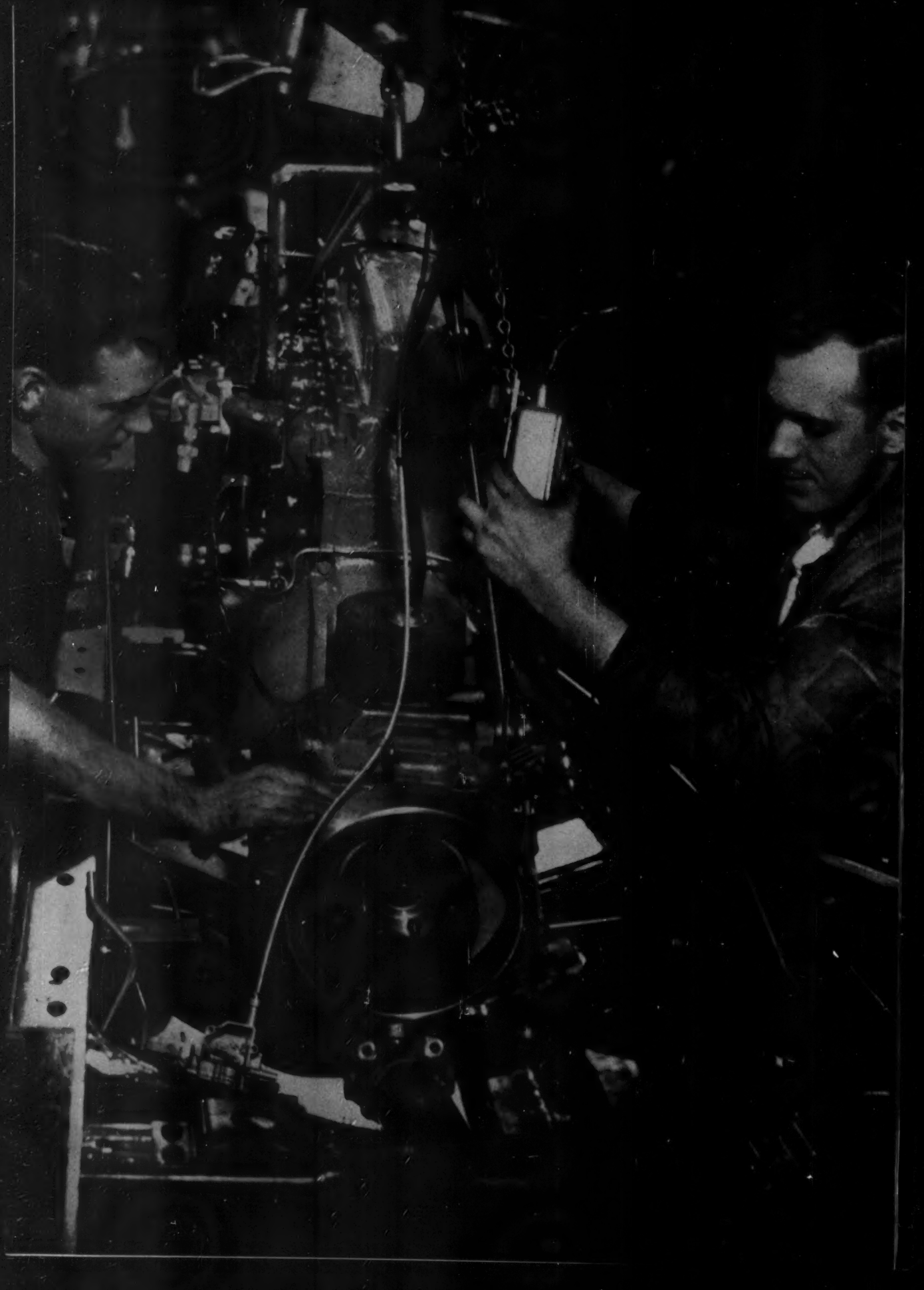


NEW! Honeywell's One-Stop Replacement Kit

Honeywell's new Water Heater Control Replacement Kit ends those time-consuming trips, by servicemen, back to the shop. This means faster service for the customer, too—and better customer relations. Finally, inventory costs and confusion are greatly reduced, for the Honeywell Kit replaces 14 of the most common water heater controls in use today. Order your supply now!

Honeywell

H First in Control



POPULAR PENNYPINCHER POLLS 400,000th VOTE

That's the 400,000th Jobmaster 6, recently dropped into a Chevrolet Series 60 truck—and it's also the 400,000th vote of confidence in a tough, tightfisted engine design that's won high praise from truckers everywhere. Like its 399,999 predecessors, this Jobmaster 6 was built because there's a tough job to do somewhere, with a tight-budgeted schedule demanding the utmost in stamina and economy to keep the books in the black. Under a program of continuing refinement since its introduction in 1954, the Jobmaster's paid off big on its promise—this outstanding sales record proves it, and the record isn't complete yet. As long as there are tough jobs to be done, or until a better way is found to do them, there'll be Jobmasters powering Chevy's lean-muscled middleweights wherever saving money matters most!

■ Saving money on tough truck jobs demands top fuel economy for sure, and the Jobmaster's free-breathing valve-in-head design and 8 to 1 compression add up to 261 of the busiest, most efficient cubic inches of displacement going. But that's only the beginning—even more important on many jobs is the ability to take a beating, to keep on delivering the goods while holding downtime and upkeep at an absolute minimum. The Jobmaster's saving ways are engineered-in throughout, in a tightly coordinated combination of long-life, low-cost features. Valving, for example, is specially designed to stand up under continuous high power output. Also, extra-duty-alloy bearings and full-flow-filtered lubrication help keep the wheels turning under the heaviest loads and in the toughest treatment a truck can be expected to take. And there are many more money-saving features . . . why not get the details from your Chevrolet dealer soon? . . . Chevrolet Division of General Motors, Detroit 2, Mich.



JOBMASTER 6 PERFORMANCE DATA

Displacement	261 cubic inches
Bore & Stroke	3¾" x 3 15/16"
Compression Ratio	8.0:1
Gross Horsepower	150 @ 4000 rpm
Net Horsepower	130 @ 3800 rpm
Max. Gross Torque	235 lb-ft @ 2000 rpm
Max. Net Torque	218 lb-ft @ 2000 rpm

MODEL APPLICATIONS

TRUCK SERIES	AVAILABLE WHEELBASES	MAX. GVW
Conventional Cab:		
C60	133, 145, 157, 175, 197"	19500 lbs.
C60-H	133, 145, 157, 175, 197"	22000 lbs.
Low Cab Forward:		
L60	121, 133, 145, 169, 175, 197"	19500 lbs.
L60-H	121, 133, 145, 175, 197"	22000 lbs.
Tilt Cab:		
T60	97, 109, 133, 145"	19500 lbs.
T60-H	97, 109, 133, 145"	22000 lbs.

1961 CHEVROLET STURDI-BILT TRUCKS

CHEVROLET

SILENT



GROVE FLEXFLO® REGULATORS' ONE MOVING PART ASSURES TROUBLE-FREE CONTROL

A flexible rubber tube (1) is the only moving part in the Grove Flexflo. Silent flexing and rolling action of the tube over a core (2) can never slam, stick or wedge. Core barrier (3) forces incoming fluids up through the inlet slots (4) under the tube and down through the outlet slots (5) The flexible tube assures positive shut-off even though foreign matter may be trapped between the core and the tube. Design simplicity assures long, maintenance-free life. Flexflo can be self operated, pilot cperated or used with electrical, pneumatic or hydraulic Grove operators. Proven in pressure reducing, back pressure, remote, automatic shut-off and manual open-shut services. Cast iron or steel bodies, sizes from 1" to 12", working pressures for gas, water and most petroleum products to 1,500 pounds. Write for Technical Presentation No. 850.

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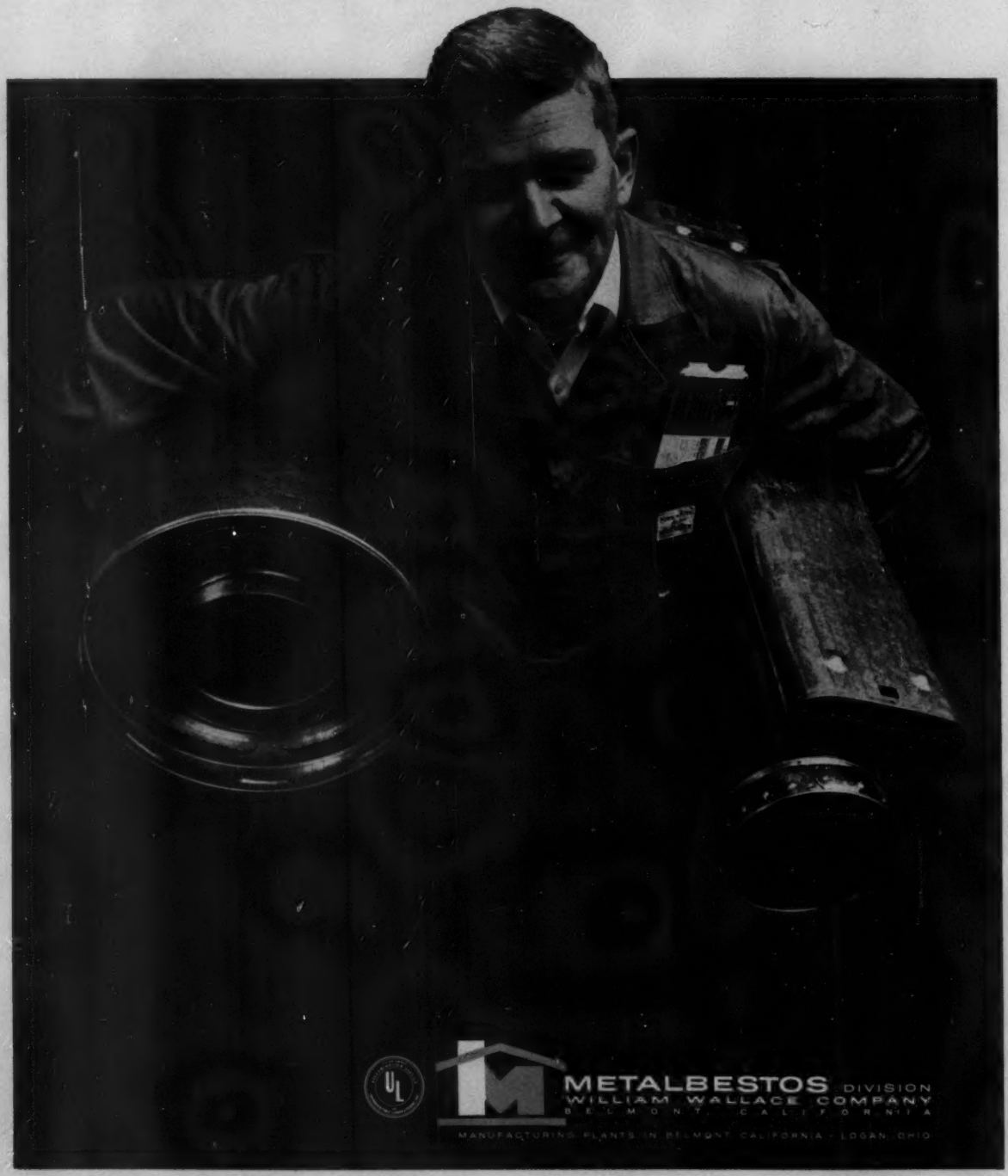
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Beyond the Mains

By WILLIAM W. CLARK • Editor



Everybody's catching the "unity" fever

AS THIS IS WRITTEN, THE OUTLOOK FOR GREATER INDUSTRY UNITY appears to be brighter than ever before. If you believed in astrology, you might say the signs are right.

As reported before, the LPGA's and the National Council's committees were due to meet (after our deadlines) last month to get down to business on coordinating their activities. But this is not the only good news. In the area of utility-LPG dealer unity, two very significant steps have been taken.

First, in point of time, was the adoption of recommendations by the AGA board of directors that the utilities give greater recognition to the role that dealers have been playing as "advance infantry units in establishing strongholds of residential and other gas service in areas not yet reached by utility gas service mains." It concluded with a plea for "positive utility assistance to these allies."

Second was the announcement by the United Gas Improvement Co., a utility that covers much of Pennsylvania, that it has adopted a Unity plan similar to the plans already in use in Minneapolis, Cleveland, and Milwaukee.

This is the third plan that has come to our attention in the past seven or eight months. Perhaps it would be premature to say that the cooperative idea is snowballing, but certainly it is gathering momentum. When you consider the size of the operations involved (UGI alone serves dozens and dozens of communities), you realize that many hundreds of dealers stand to benefit.

What the AGA has done is perhaps the most significant of all. The association is the voice of the gas utility industry, and when it takes such a stand it is a good bet that it has the approval of a substantial majority of its company members. So we would hope we're not being overly optimistic in predicting that, in the months ahead, many more utility companies will come out with their own programs. The snowball *could* be forming right now.

Progress such as this is the product of a great deal of work by a great many people. Having watched the situation as closely as we could for several years, we are aware that there were many heartbreaks and frustrations along the way. There were certainly times when we wouldn't have been willing to lay any money on the chances of dealers-utility cooperation working successfully. And any hopes we entertained that the concept would be given national recognition seemed starry-eyed foolishness.

But it's happened.

And in the same way, all the other elements of the gas industry can be brought more closely together to increase the stature of the industry. The association and the Council are seeking out a common ground where they can increase their own effectiveness. The producers are being asked for more active support and certainly, judging from the way they turned out for the LPGA show, there is reason to hope the effort will bear fruit.

As we have pointed out before, the forms these efforts take is not the most important thing. What they accomplish in the way of building the industry is. The industry has magnificent potential. Let us all hope we can attain it. ■

BPN NEWS PARADE

The industry in action

ASSOCIATIONS

Merger not yet approved

The following joint statement was issued June 14, by the National L. P. Gas Council and the Liquefied Petroleum Gas Association. The statement, coming from E. O. N. Williams, LPGA president, and D. G. O'Meara, Council president, is as follows:

"The Council and LPGA will continue to provide services and benefits for their members as separate organizations—with separate dues structures to finance their respective industry work.

"Further study of organizational improvements was approved by appointment of joint subcommittees to develop plans by which this unity objective could be accomplished for the benefit of the entire industry."

The two presidents, at the direction of their respective boards, have appointed a 16-man joint committee to study ways to achieve greater "unity" between the two organizations. Co-chairmen of the committee are Al Cote, Suburban Appliance Co., representing LPGA; and Ken Wolfe, Fisher Governor Co., representing the Council.

AGA endorses Gas Unity programs

The American Gas Association is showing a desire for Gas Unity. Foremost among its recently adopted goals (at a board of directors meeting) is this one:

"Recognition of each gas utility that distributors of LPG in its area can be and should be mobilized as individual allies and advance guard units in selling gas service in areas not yet reached by utility gas mains; and positive utility assistance to these allies in establishing further strongholds of gas service in all areas currently beyond the reach of gas mains."



Pasley Manufacturing & Distributing Co. moves into a new office and warehouse in Kansas City, Mo., this month. The company distributes liquefied petroleum gas equipment and serves about 2000 dealers in a 10-state middle western area. Engineers for the firm have designed and built more than 300 bulk plants in the last 14 years.

IAM holds largest convention

"Manufacturers and distributors are not keeping up with the revolution in appliance distribution," charged Maurice M. Cohen, president of Cambridge dealership, Lechmere Sales Co., before the Institute of Appliance Manufacturers' annual convention held last month in Cincinnati. More than 630 appliance industry executives attended.

Cohen claims gas appliance makers have failed to meet standardization obligations; that manufacturers and retailers are drifting too far apart; that distribution methods are outmoded; and that private label merchandise is getting the break in retailing efficiency.

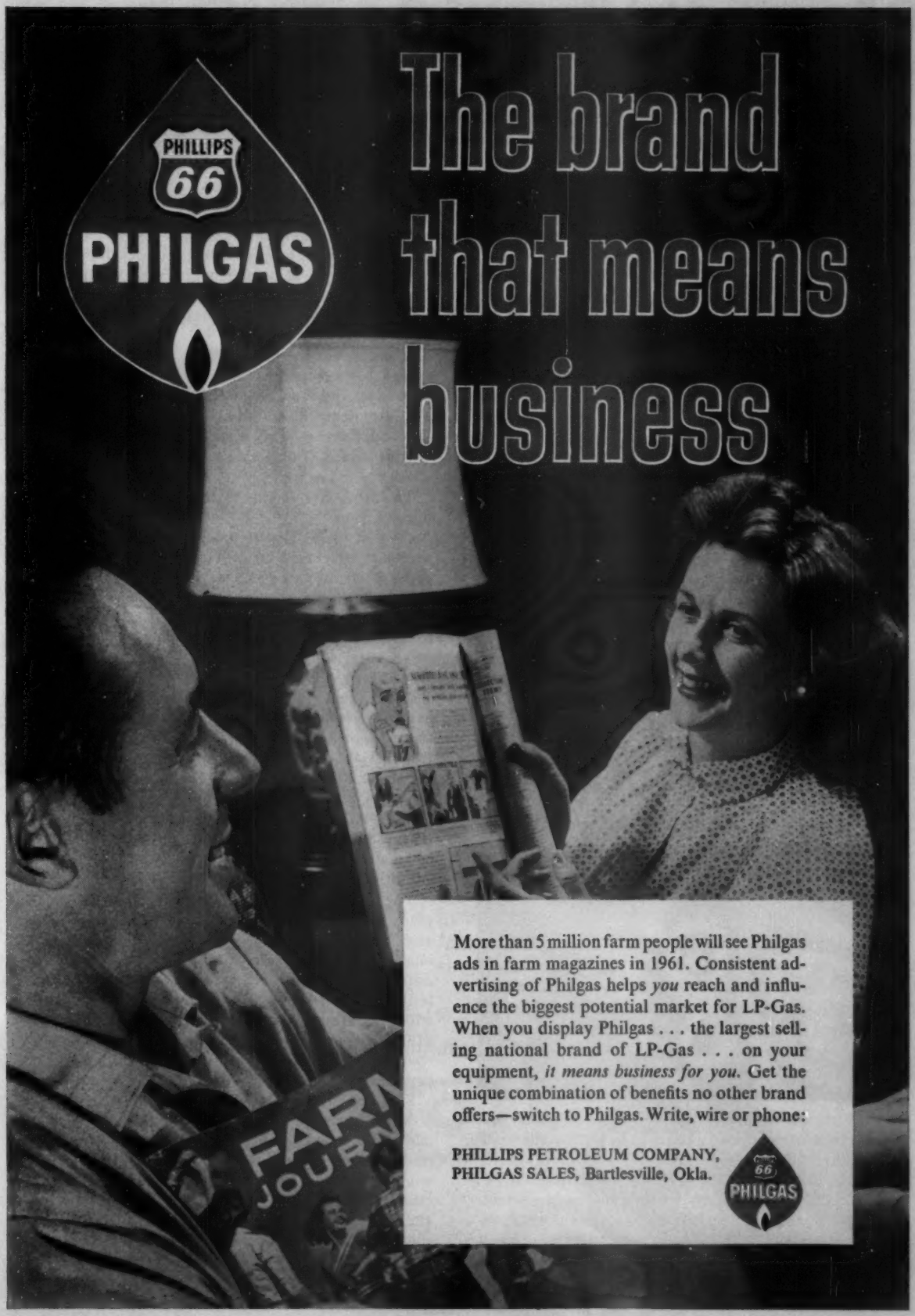
Sol Goldin, retail marketing manager of Whirlpool Corp., was re-elected president. Other officers are: A. B. Ritzenthaler, vice president of Tappan, executive vice president; E. Carl Sorby, vice president of Geo. D. Roper Corp., secretary; and S. B. Rymer, Jr., president of Magic Chef, treasurer.

Council names Snipes

Johnston Snipes has been named editorial director of the public relations division of the National L. P. Gas Council. His initial assignment will be the planning and staff supervision of the industry's 50th Anniversary celebration in 1962. Snipes will headquarter at Evanston, Ill.

GAMA, AHLMA report ups, downs

Gas Appliance Manufacturers Association reports that shipments of gas furnaces, boilers and conversion burners during April were 3.1, 5.9 and 7.8 per cent respectively, over the preceding month. Gas-fired automatic storage water heaters were up 24.1 per cent over the 216,200 units reported for April last year. Built-in domestic gas ranges gained 1.1 per cent over the 28,000


PHILLIPS
66
PHILGAS
The brand that means business
More than 5 million farm people will see Philgas ads in farm magazines in 1961. Consistent advertising of Philgas helps *you* reach and influence the biggest potential market for LP-Gas. When you display Philgas . . . the largest selling national brand of LP-Gas . . . on your equipment, *it means business for you.* Get the unique combination of benefits no other brand offers—switch to Philgas. Write, wire or phone:
PHILLIPS PETROLEUM COMPANY,
PHILGAS SALES, Bartlesville, Okla.
66
PHILGAS

The industry in action

units which were shipped last April.

American Home Laundry Manufacturers' Association reports for April: combination washer-dryers down 20 per cent from March; electric dryers down 45 per cent from March; and gas dryers down 42 per cent.

REGEIMBAL: WASHINGTON

New road for REA

Government rural electric officials are charting a new course for the REA, now that almost all farms in the country have electric power.

Objective of the new REA plan is the commercial, industrial, and residential development of rural areas by electric co-ops using government funds to provide cheap power. The program is pegged in part to the Kennedy Administration's drive to help depressed farm areas. But it is not limited to the suffering sections of the country.

Now, in considering whether to make government loans for power generation facilities, the REA will weigh the "future security" of the co-op borrower's "territorial integrity." This adds up to a plan to grant loans "to guarantee the co-operative device a permanent place in the American power industry."

Previously, generation loans could only be granted if there was no adequate and dependable private source of power which the co-op could buy at a reasonable price—not necessarily a price as low as government-financed facilities could produce it.

In addition, the REA is expanding its loans to co-ops for helping consumers finance wiring and purchase and installation of electric appliances. To date, some $1 billion of REA funds has been used to finance generation and transmission facilities and $43 million to finance consumer purchases.

The REA co-ops expect to get new loan-making powers, on top of the $225 million a year now being voted by Congress, as a result of the new depressed area program. This new program provides $100 million for loans to rural areas.

The REA has also assumed the power to use funds it receives for the electrification program to finance purchase and installation of electric machinery for commercial and industrial firms locating in rural areas served by co-ops.

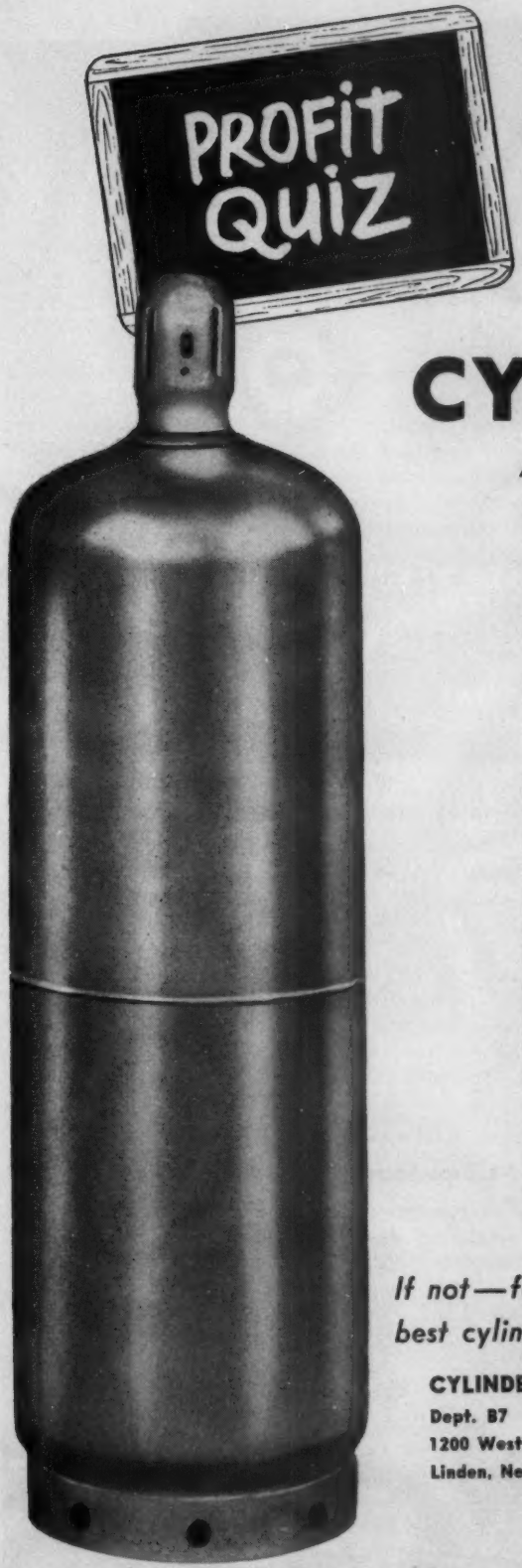
This expansion of REA—most of it without congressional approval—is bringing cries of "back door lawmaking" from some congressmen. But in spite of the criticism, the House passed the Administration's REA appropriation intact. This provides $195 million in new loan funds, which coupled with a $30 million carryover, will give REA $225 million in the next year. (REA had requested $310 million, but was cut back by the Administration.)

The appropriation bill does call for a special study by REA on how big co-op reserves can get and how they should be invested. This is in answer to criticism that the reserves come from government loans at 2 per cent, and some $250 million are invested in regular government bonds which pay over 3 per cent interest. Only about $16 million of REA funds have been invested in special Treasury bonds which pay the same 2 per cent interest as the co-ops.

Size of the impact of tax-exempt, subsidized power co-ops on competing private business is shown in a survey of power consumers who reported they intend to buy more than $1 billion worth of electric appliances this year. This includes 456,000 ranges, 393,000 water heaters, 422,000 clothes dryers, 186,000 furnaces—all of them electric. Over half of the all-electric homes in the country are served by co-ops, although co-ops serve only about 20 per cent of all the homes in the country.



Pushing the button to start up the world's largest gas-fired continuous radiant furnace for the manufacture of water heaters at the A. O. Smith Corp., Kankakee, Ill., are (left to right) J. F. Donnelly, assistant to executive vice president; M. E. Morgan, vice president of Consumer Products Division; F. S. Cornell, executive vice president of Milwaukee, Wisc., plant. The furnace is 310-ft long and has a 25 million Btu per hour capacity.



DO YOU REALLY HAVE THE BEST CYLINDER BUY?

Are your cylinders:

Girth welded for greater safety and security, smarter appearance, longer service?

Galvanized on the footring and part of the bottom cup for maximum resistance to corrosion?

Equipped with curled handholds for easier handling, greater customer satisfaction?

Completely welded at the footring to prevent moisture seepage, retard rust and corrosion?

Made of the finest low-alloy, high strength steel for tough service?

Lighter in weight for easier handling, simplified filling, less costly shipping?

"Normalized" to remove harmful stresses rather than heat treated as done by most manufacturers?

Double painted for longer life, reduced maintenance?

Inspected at every step and finally pressure tested at **twice** the strength demanded by actual service?

Made with extra thick bottoms and footrings?

If not—for the really best cylinder buy write:

CYLINDERS INC.
Dept. B7
1200 West Blancke St.
Linden, New Jersey



1200 WEST BLANCKE ST., LINDEN, N. J.

Cylinders, Inc. Successors to the propane and refrigerant cylinder manufacturing business of Linde Company, Division of Union Carbide Corporation.

BPN NEWS PARADE

The industry in action

LPGA fights tax co-ops

Bitter criticism is being leveled at President Kennedy's proposal to continue the tax exemption for REA cooperatives while closing the loophole for other co-ops.

The battle to get REA co-ops included in any co-op taxation measure now is vital, because there is a good chance that such legislation will pass within the next 12 months. Support for closing the co-op tax loophole is widespread and powerful.

Leader in the battle—and it's going to be a tough fight because of the REA's support in Congress—is the L.P. Gas Association.

Arthur C. Kreutzer, vice president and counsel of the LPGA, presented the industry's arguments to the tax-writing Ways and Means Committee in May. President Kennedy's proposal to permit continued tax exemption for REA co-ops "is a far cry from (the) fair and equitable treatment" that the chief executive says he wants, the spokesmen charged.

Legal and economic justification for the REA co-op tax exemption is even weaker than that for other co-ops, he commented. It depends, he pointed out, on a tax code provision adopted before REA co-ops were formed which refers to cooperative telephone companies and "like organizations."

Kreutzer also complained that the Treasury Department has argued that REA co-ops need the tax exemption because they have "special problems in raising capital." He terms this a "gem of inconsistency," because the capital of REA co-ops is supplied by government loans at cheap 2 per cent interest. "Private enterprise would like to have that problem in raising capital," he said.

Udall supports fuels policy

Testifying before the Senate Interior and Insular Affairs Committee on June 12, Secretary of the Interior Stewart L. Udall supported the national fuels and energy study. Part of his statement:

"More than ever before world-wide social doctrines as well as political events are tied to industrial development. And energy resources are fundamental to industrial development. If we are to maintain our own domestic well-being, as well as meet our world-wide responsibilities, we should now review our own energy situation in relation to the total situation confronting us. We should take action now to insure against an energy gap.

"A study of fuels and energy by a Senate committee, and appropriate action based upon its recommendations, would go far toward assuring all Americans that they will never be faced with such a gap.

"This Administration fully supports such a Senate study. We want a long-range study, a balanced study that will look very thoroughly into this field, and, in weighing all the considerations involved, will use as its yardstick the enlightened long-run good of the country as a whole. We cannot let policy affecting resources as important as fuels and energy be set by drift, by default, or by piecemeal actions which do not reflect such paramount considerations as the future health of our economy, national security, and our concern for the well-being of the free world.

SUPPLIERS

Trinity steel reports sales increase

Trinity Steel Co. Inc. of Dallas, which manufactures LPG tanks and transports, has reported a sales increase of 37 per cent for the year ended March 31 over the previous year.

W. Ray Wallace, president of the firm, reported sales of $5,240,000 for the year, over $3,819,000 the year before. Net income for the year recently completed was $237,850, recorded after a loss of $70,653 for 1960.

The book value of the firm's shares increased 78 cents, and is now $3.47.

Phillips leases 50 giant tank cars

A revolutionary new railroad tank car which breaks all design precedents was delivered last month to Phillips Petroleum Co. by General Amer-



New tank car, delivered to Phillips Petroleum Co., has a diameter of 99 in. at each end and 118 in. at the midriff.



Join the companies that help keep the LP-GAS INDUSTRY on the move

These seventeen market-wise companies are on the move, actively supporting the nationwide GEM campaign to promote the greater use of Gas and LP-Gas for major household appliances. Their aim: greater growth and prosperity for the *entire* Gas and LP-Gas Industries.

All suppliers to the Gas and LP-Gas Industries are cordially invited to join this worth-while activity. Write to the Gas Equipment Manufacturers Committee, Room 2925, 60 East 42nd St., New York 17, N. Y.

The industry in action

ican Transportation Corp. of Chicago.

The car is the first of 10 built and offered for lease by General American. It has a water capacity of 30,300 gal.

Phillips has purchased 50 more of the giant cars to supply the new 150,000-gal. terminal in West Memphis, Ark. The terminal will be operated by WardenGas, Inc., and is scheduled to open September 1.

MARKETS

Indiana, Ohio farmers view flaming

Flaming weed control was described in detail and demonstrated to a group of more than 150 Indiana and Ohio LPG and farming authorities last month by the Lee Cylinders Division of Golay & Co. Inc., Cambridge City, Ind. The event took place on the Chore-Boy Demonstration Farm, located near Centerville, Ind.

Equipment used in the demonstration was provided by the manufacturer, Arkansas Foundry Co., and a local dealer, Town & Country Gas Co., Noblesville, Ind.

USDA has first flaming demonstration

Culminating six years of "unofficial" experimentation, the U. S. Department of Agriculture gave its first "official" recognition to flame cultivation during a two-day series of field days at its Brawley, Calif., cotton research station. Approximately 200 cotton farmers from the famed Imperial and Coachella Valleys saw vivid proof that flaming kills weeds, but not young cotton.

The flaming was performed by a cotton fertilizing and weed control specialist, Bob Manchester of Holtsville, Calif. Previous to this year, Manchester had used only chemical weed controllers. Recently, he bought four pieces of Gotcher flaming equipment and he now does custom flaming throughout the Imperial Valley.

Credit for staging the demonstration and giving flaming its first "official" USDA recognition should go to Brawley station director Dr. Peter Von Schaik, who invited Manchester to make the demonstration. Manchester was assisted by J. W. Gotcher and a number of people from Petrolane Gas Service Inc.



This is one of a pair of USDA jeeps used during the demonstration. Each jeep pulled a pair of flat-bed hayracks, which had long benches on each side. Using these rigs, the attending-cotton farmers were taken from one area to another around the station, to see flaming and other cotton demonstrations.

Record-breaking heater installation

A new world's record for a hydronic heating installation was established in 49 minutes flat. Purpose of the speedy installation was to show the ready availability of premium quality hydronic heating systems at no additional cost to buyers of lower-priced homes.

The record was set at a demonstration installation put on by the Hawthorne Master Plumbers Association at Allendale, New Jersey, in May.

MARKETERS

Dealers sponsor co-op TV

Dealers in South Dakota and Southwestern Minnesota have joined forces to promote LPG via TV. Every Tuesday and Thursday for 26 weeks, they are carrying the sales message on a late news show over a Sioux Fall, S. D., station. There are 16 participants.

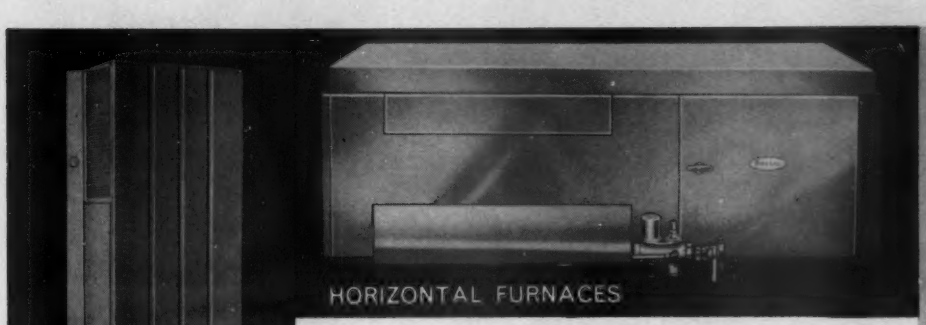
Ugite expands, purchases two firms

Ugite Gas Inc., Malvern, Pa., recently purchased Perfect Propane and Perfect Bottle Gas Companies of Honesdale and Milford, Pa.

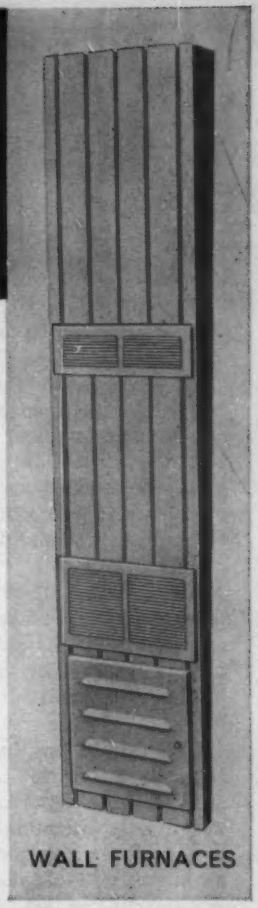
The acquisition broadens Ugite's area of operation into New York State, northern New Jersey and northeast Pennsylvania. This also provides the eighth and ninth LPG distribution points for the firm, which presently operates in a five-state area, serving approximately 25,000 customers.

NEWSBRIEFS

NFPA 1961 standards and revisions approved at the recent NFPA annual meeting in Detroit are now available in pamphlet form. Pamphlet 58 was







KEEP UP TO 20% MORE PROFIT WHEN YOU SELL THE COMPLETE LINE OF EMPIRE

GAS HEATING APPLIANCES

Advanced engineering, quality construction, competitive pricing, all mean more sales opportunities for you.

Empire cuts installation cost up to 15%, service costs up to 70% less.

You keep up to 20% more profit. It will pay you to write today for the complete Empire selling plan.





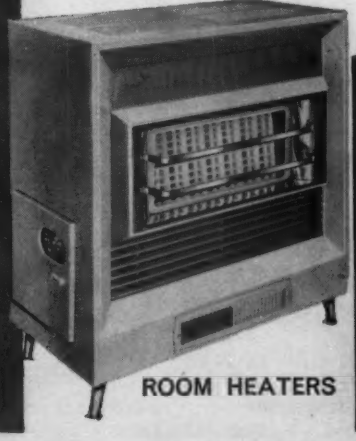
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The industry in action

adopted as preprinted with an amendment to paragraph 6:11. (No. 58 revision appeared in the June issue of BPN, page 39.)

Employees of the Palatka, Fla., Gas Authority do not need to be licensed gas fitters, as ruled by the city attorney's office; but their work must be subjected to inspection. The ruling came as a result of charges levied against the authority by L. P. gas dealers, who said that connections made by the authority's employees have been found unsafe.

A bill being introduced in the North Carolina legislature will make it illegal to store gas in substandard containers or sell appliances not approved by the AGA. Safety regulations prescribed by the NFPA will have to be maintained.

LPG regulations for Ontario are now available from the Ontario Department of Energy Resources. The department will certificate propane gas fitters. Examinations are expected to begin in September. Completion of the certification program will be in January, 1962.

Flame cultivation is making a comeback in South Carolina, according to M. C. McKenzie, leader of extension agricultural engineering work at Clemson College, Clemson. He says this revival has been due to two things—the unusually wet spring, and growing interest in mechanization.

Sinclair Oil & Gas Co.'s (Tulsa, Okla.) production of natural gas liquids at gas products plants set a record of 771,330 gal. daily during April. Sinclair owns an interest in 38 plants, 15 of which it operates.

LPG was characterized as "a cinderella fuel that is being ignored by the oil industry," by Don Barton, sales manager of Skelgas Division, Skelly Oil Co., at the recent API Marketing Division midyear meeting in Bal Harbour, Fla.

An air conditioning load estimating package, including a 94-page manual on heat gain and loss, is now available from Arkla Air Conditioning Corp., 812 Main St., Little Rock, Ark. The price of the manual is $2.

Spatz Paint Industries, Inc., St. Louis, recently announced the appointment of the E. C. Underwood organization of Pittsford, N. Y., as exclusive representative in the upstate New York area. Spatz manufactures a line of coatings formulated especially for use in preserving tanks used in the LPG industry.



CURRENT L.P. GAS & L.R. GAS PRODUCTION & INVENTORIES

(A.P.I. figures—in thousands of gallons)

	Propane	Butane	Bu-Pro Mix	Iso-Butane	Other Mixes	Total LPG	Total LRG
Production (U.S.)							
May '61	381,341	182,473	57,521	65,637	88,318	775,290	313,237
May '60	349,264	175,208	55,839	62,059	68,146	710,516	269,067
'61 to date	6,049,565	3,078,304	913,394	1,007,682	1,262,469	12,304,414	4,605,168
'60 same period	5,547,228	2,975,107	948,253	930,475	1,089,741	11,519,714	4,113,296
Inventories(5-31-61)							
Zone A	11,818	2,081	17	...	10	13,926	28,417
Zone B	51,580	4,876	...	1,533	978	58,967	33,568
Zone C	98,986	31,094	1,232	4,369	...	135,681	17,606
Zone D	78,543	11,393	17,494	902	78	108,410	816
Zone E	180,783	186,952	1,772	51,951	18,693	440,151	79,511
Zone F	220,611	107,614	974	28,317	12	357,528	4,734
Zone G	5,871	933	8,818	...	...	15,622	1,250
Zone H	1,159	322	156	206	89	1,932	46,665
U.S.	649,351	345,265	30,463	87,278	19,860	1,132,217	212,585
U.S. (5-31-60)	421,838	292,807	22,866	53,262	4,309	795,082	109,310

Making Profits is Your Business —
Helping You is Ours



You're on the job, day in and day out. That's Why your judgment determines your sales and profit picture. But, you don't have to work alone. For instance:

As an LP-Gas supplier, Sinclair offers extra services to Sinclair TRUFLAME LP-Gas distributors that can help raise sales and profits. Sinclair specialists in engineering, sales and advertising are at your service to provide the extra help you may need.

So, investigate a Sinclair TRUFLAME LP-Gas contract by getting in touch with your nearest Sinclair representative, or write direct to the Tulsa office. We'll give you the facts about Sinclair help, and you'll be under no obligation, of course.

Sinclair Truflame LP-GAS

Sinclair

SINCLAIR OIL & GAS COMPANY

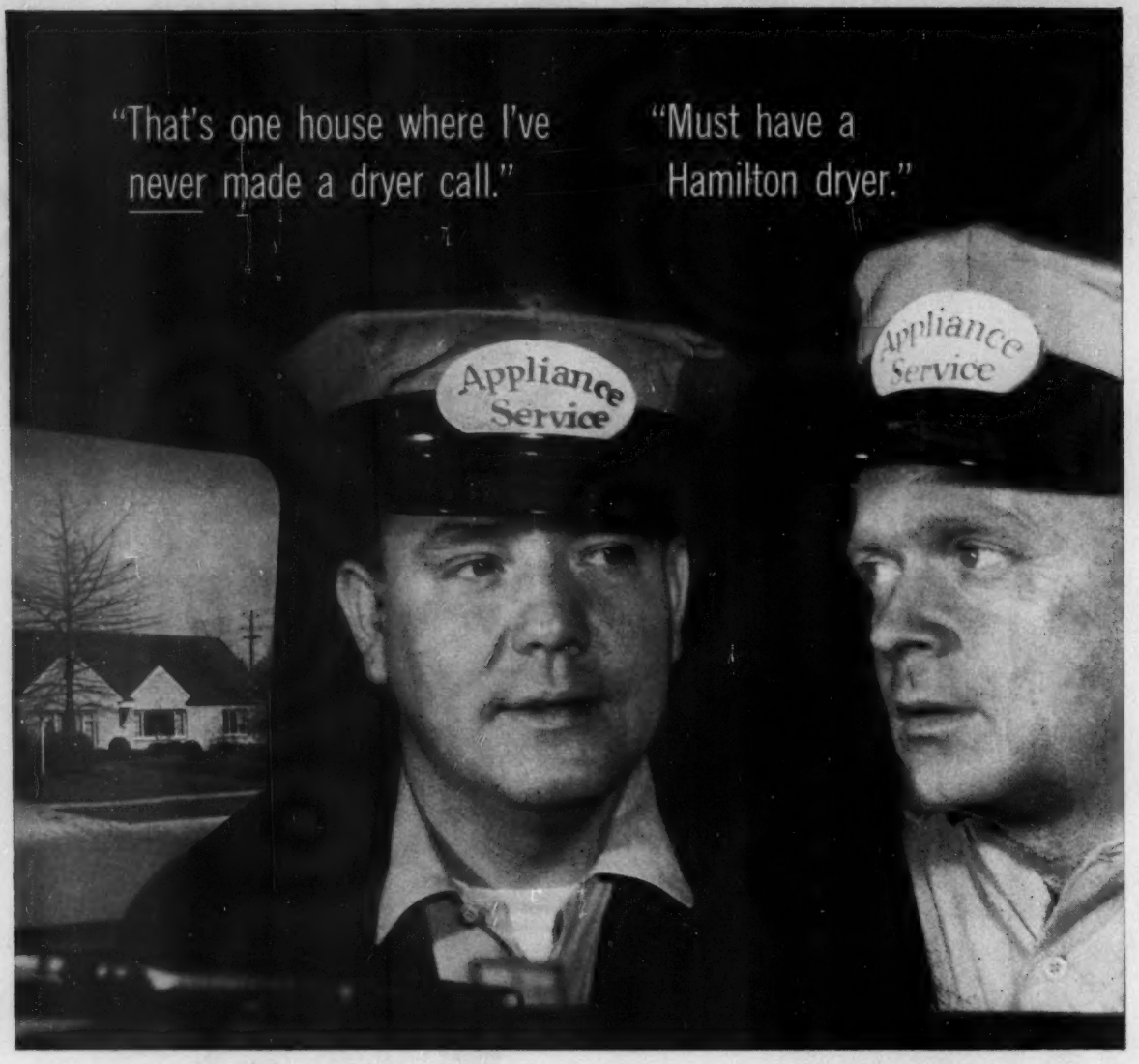
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BELLEVILLE, ILLINOIS • JACKSON, MISSISSIPPI



Service-free dependability

- another sales plus for you in

Hamilton dryers

More women have bought Hamilton dryers—because these performance features mean more:

1. CONTROLLED "NATURAL" DRYING—exclusive Twin Air Streams combine sun-like heat and fresh clean "breeze," drying clothes soft and fluffy.

2. GENTLE TUMBLING—within satin-smooth, snag-free drum, protects and pampers the sheerest, most delicate garments.

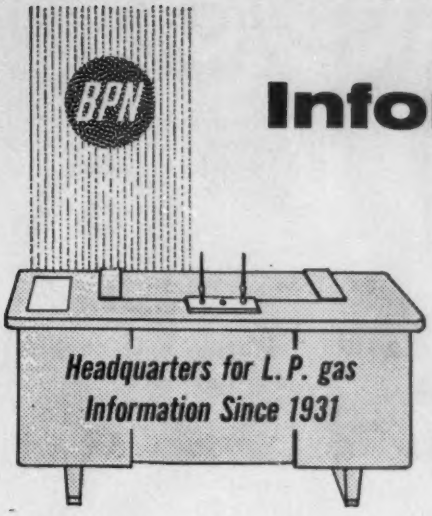
3. "HUSHED" DRYING—so quiet you'll hardly realize it's running. There is no rattle, no grind, no loud hum.

4. SERVICE-FREE DEPENDABILITY—more than a million satisfied owners have made Hamilton America's "most wanted" automatic dryer.



The famous "woman-on-the-stairs" symbolizes the relief from washday drudgery enjoyed by over a million satisfied Hamilton owners.

Hamilton Manufacturing Company, Two Rivers, Wisconsin



Information Desk

How to clean cylinders . . . When do you determine temperature? . . . Tar kettles operate on vapor . . . Noisy heating unit . . .

Cleaning cylinders for reuse

California

I recently purchased 200 used 60-lb gas cylinders, and I want to clean and paint them. Do you know of any solution which could be used to remove the rust and old paint from the cylinders?

I have obtained useful information from your "Information Desk" articles and would appreciate any suggestions you can give me on the above mentioned.

F. B. K.

One product which has proven effective in removing lacquers and paints from steel is Turco Paint Tip No. 1 produced by Turco Products, P. O. Box 1055, Wilmington, Calif.

It is applied to the surface by brushing or spraying. After a few minutes, it can be washed off with water leaving the surface clean, ready to dry and paint.—Ed.



To determine temperature when transferring fuel

Arkansas

I am a transport driver and I haul fuel from pipelines, barge terminals, refineries, etc.

When you load a transport from any of these places, where do you get your temperature reading for corrected gallons? From the storage tanks and barge terminals, from the liquid line while loading transports, or from the storage tanks or truck, or wet line at a refinery?

The barge comes in at the terminal and unloads 540,000 gals. at one time and the gas stays in the tanks and the terminal for some time. The temperature remains low. Must we in the transport hauling business absorb a great loss by taking the temperature off the storage tank instead of the truck where there is a 10 to 15 deg. difference?

L. L.

There are three principal ways in which the quantity of product is determined when delivered into a container: *1.* By metering the product as it is transferred, *2.* By filling the receiving container to a calibrated level, *3.* By weighing the product delivered to the container.

When temperature correction is involved in the sale, and it usually is because most wholesale transactions are based on a 60 deg. F corrected volume basis, the temperature should be determined at the point of measurement.

If the product volume is determined by a meter, then the temperature should be taken at or near the meter. If the volume is determined by a calibrated level in the transport vessel, then the temperature of the product should be determined in the transport vessel when loading is completed.

When the quantity of product is determined by weighing and then converted to a volume basis, the temperature of the liquid in the weighed container should be taken at the time of weighing.

You state that there is a difference of 10 to 15 deg. F in temperature in the fuel between the time it is in storage at the barge terminal and after it has been loaded into your transport vessel. We assume you mean the temperature is higher after loading into the transport. It will depend on where the fuel volume is measured. If the volume is determined by a meter, then the temperature of the fuel as it passes through the meter is probably the same or very close to the temperature in storage. It should be checked at the meter. If the volume is determined by volume or weight in the transport vessel, then the temperature should be determined as outlined above after the transport vessel has been filled.—Ed.



Many tar kettles operate on vapor

Indiana

We would appreciate any information you can give us regarding the size of tar kettles which can be fired with a vapor burner and maximum two-cylinder hook up. Our experience has indicated that a liquid burner is far more satisfactory for use with tar kettles, but the state of Illinois recently purchased a number of vapor burners for this purpose. To date we are having difficulty obtaining satisfactory operation.

D. E. B.

There are many tar kettles with burners which operate on vapor instead of liquid. Normally they must operate on high pressure to give satis-

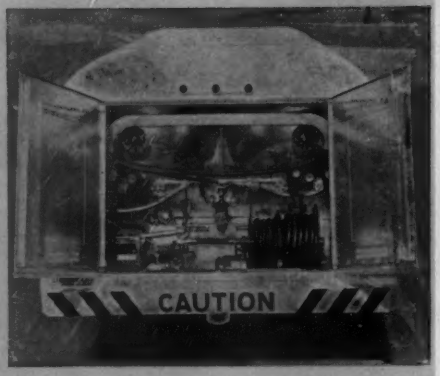
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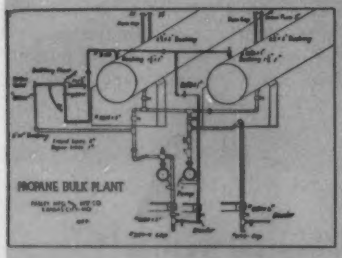


"The Loadmaster" LPG Truck Tank

SQS

PASLEY-DESIGNED Truck Tanks (see above and right) were first to feature all controls from one location. **All operation is from one point—rear compartment.**





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factory results, because the flame must go through a tube and around some bends. This requires the burner to generate enough velocity pressure to carry the flame and combustion products through the combination tube.—Ed.



Heating unit should not be noisy

South Dakota

In our motel we have Cir-Cu-Ray wall heaters. Two of these units started a vibration hum shortly after burner ignition. It can be stopped momentarily by changing the air adjustment on the burner.

Can you explain what causes this and what can be done to eliminate it?

H. A. M.

I think you should take this problem up with the manufacturer or his agent. It is difficult for us to tell what may be causing this resonance in the particular heaters you mentioned.

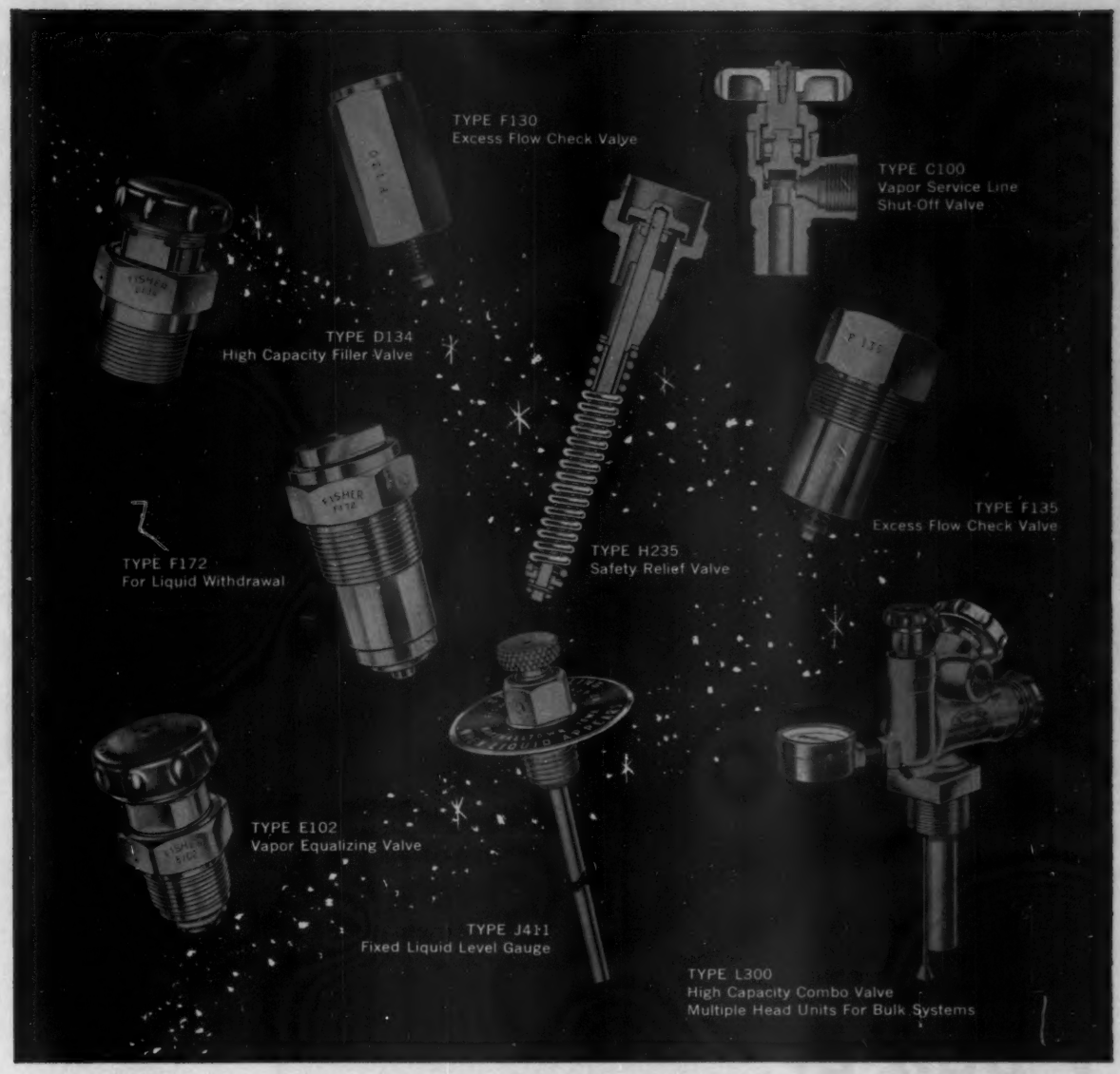
Apparently this is an AGA-approved and listed appliance. If it is, it has been well tested and there should not be any resonance occurring under normal operating conditions. Perhaps these were converted and were not shipped from the factory as LPG units. You should check the name plate carefully and see if they are of a type that is approved for LPG.

Normally an adjustment of the air shutter will eliminate any resonance of the nature you have mentioned. There may be something in the manner of installation or venting that is affecting the burner, especially if you have not used the proper draft hoods, etc., as furnished by the manufacturer.—Ed.

LPG aids Titan

Recently Darold Stone of Acme Gas Service, Yuba City, Calif., made arrangements to supply LPG to the New England Lead Burning Co., a sub-contractor on the Titan Missile Program near Lincoln, Calif.

LPG is being used to melt lead for counter balances used in the launching of the missile. The lead melting burners have a capacity of 6,000,000 Btu.



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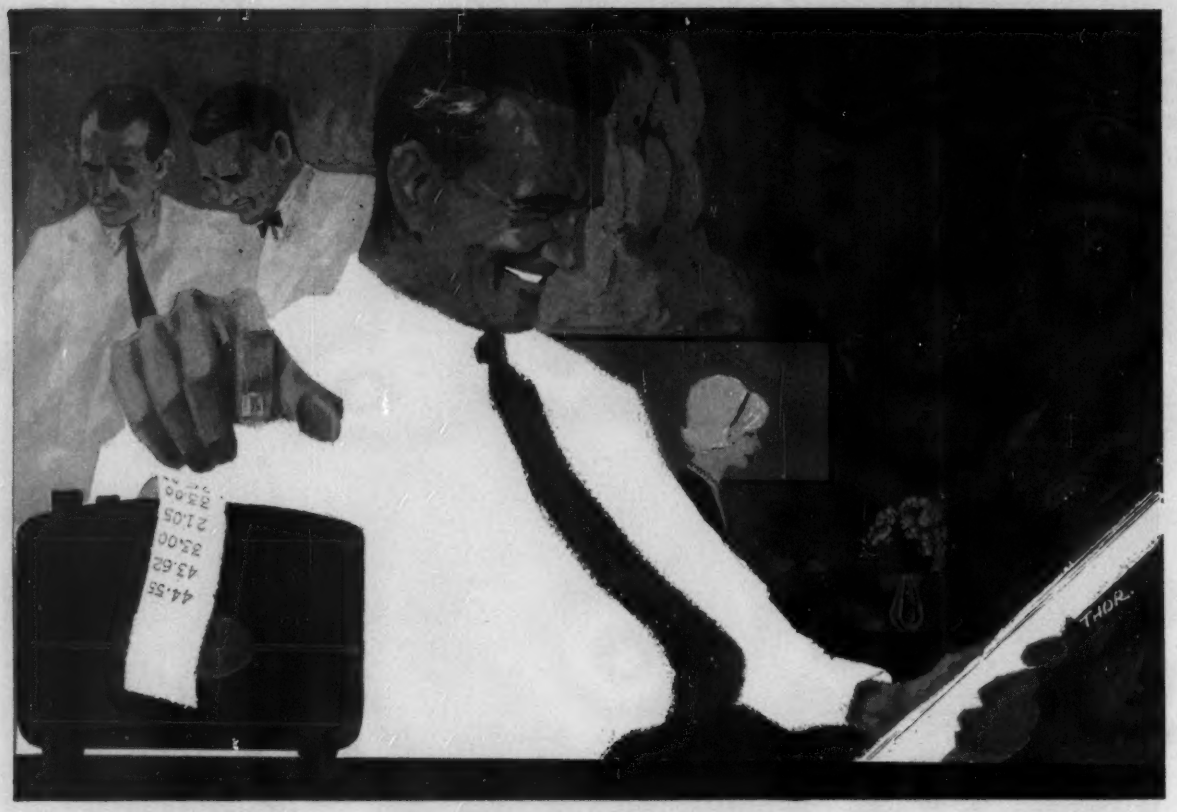
Here are just a few of the many fittings that the industry refers to as "Fisher Engineered." From the bulk station, the tank truck or the home cylinder, LPG men have found by experience that Fisher Engineered means freedom from trouble and freedom of mind. This dependability keeps your customers sold by uninterrupted service. Standardize on Fisher. Come out ahead!

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How L. P. gas dealers view their industry

L. P. gas dealers are shifting their emphasis toward new, unexploited loads . . . industrial loads, farm tractor loads, house-heating, flame cultivation. Their biggest problems are putting across the safety story to their customers . . . educating their customers, putting into effect satisfactory Unity programs, holding the line on credit, finding "energetic" salesmen.

They feel there should be closer cooperation among dealers on an area basis, to fight the competition and promote the image of LPG.

THESE WERE AMONG THE STRONGEST IMPRESSIONS GAINED in a series of "man-in-the-street" type interviews conducted by the Selwyn-Pacific Co. in its booth at the LPGA Convention in Chicago.

Approximately 50 interviews were made by members of the Sel-Pac staff, and the replies were recorded on tape. Questions were supplied by the editorial staff of BUTANE-PROPANE *News*.

Generally, the question that elicited the highest response was this: "From what kind of loads do you think your greatest growth will come in the future?"

Where househeating has not been pushed, it won a good share of the votes . . . from a dealer in Holland, Mich., for example ("Househeating is growing tremendously now"); I. Katzowitz, Star Gas Co., Poughkeepsie, N. Y. ("The heating load will provide our biggest volume"); Milton Levinson, Cecilgas, Elkton, Md.; L. G. Williams, LaSalle Bettergas Co., LaSalle, Ill.; Ralph Fisk, Fisk Gas Co., Cobleskill, N. Y.; Harry Smith, Mid-Hudson Bottle Gas, Poughkeepsie, N. Y.; and a number of others.

As will be noted, this vote came primarily from the Northeast, the old bottled gas stronghold. It could be concluded that the shift to bulk will continue in that area, bringing promise of sharply increased per-customer use.

Another indicator of increased





L.P. gas dealers

usage in the area was the preponderance of votes that industrial loads received as the usage of the future. Moylan Brown, who as East Central district LPGA secretary headquartering in Harrisburg, Pa., has a good grasp of the thinking of a number of dealers in his area, cast his vote for "fork lifts and industrial applications."

Irvin Etscorn of the Big Three Gas Co., Louisville, Ky., told the interviewer he believed the biggest new load for LPG in the next 18 months will come from industry. "In our area, we're building up a terrific business in industrial loads. And it will hold up for quite a while."

Forrest Parris of AAA Gas & Appliance Co., Waukesha, Wis., who split his vote several ways, put industrial first—"medium size industrial—building trades, etc."

Said Bill Blocker, Blocker Propane Equipment Co., Indianapolis: "There's a tremendous field in industrial uses in our particular area, and I assume it's the same all over the country."

Mel Price of Lakeland Redigas, Waukegan, echoed this sentiment. "In our area, industry offers the biggest hope. We're working with factories, selling lift-truck cylinders. . . . Carburetion is another thing that is working out real well —that is, carburetion in general."

Flame cultivation had its proponents, too. One Indiana dealer said: "It's just getting started in our state. I think it's going to take three or four years to educate the farmers in its various uses . . . then it should reach the peak of its potential."

Representatives of the industry in the South and West also see a great future for flame cultivation. Among these were Preston Grace of White River Distributors, Batesville, Ark.; Roland Usher of Algas, Los Angeles; Irvin Etscorn of Big Three, Louisville. But it also drew "votes" from Illinois and Iowa as well.

The case for the farm tractor was stated most strongly by Jay Blount of Central Iowa Service Co., Fort Dodge. "Without a doubt, the biggest potential new market is farm tractor. It's ready and waiting for us right now . . . all we have to do is give it a push and we'll have it." Roland Usher, who heads up the retail fuel marketing side of American Liquid Gas Co., Los Angeles, also cast part of his vote for farm tractors. "The biggest new loads will be those we are working hardest on now—industrial trucks and the agricultural vehicles, such as tractors, flame cultivation, etc.

Interviewers shown in the pictures are: Walter Bond, sales manager, Selwyn-Pacific Co.; Robert Hardy, general manager of Selpac; Jack Crawford, northern district sales manager; Frank McGowan, eastern district sales manager, and Don Ryan.

"It's our opinion that the trend will be increasingly heavy toward these loads, with less emphasis on the domestic load."

A pair of L. P. gasmen from La Crosse, Wis., also saw the tractor load as one of their big opportunities for the future.

What's the industry's biggest problem today?

To this question, the opinions were many and varied. Roland Usher felt that the problem was "two-fold: public relations—getting ourselves out before the customer—and unity in our credit and collection problems."

Moylan Brown summed up the major problem facing the industry with one word: education. "We need education both within the industry and outside it. We must educate the customers to the advantages of L. P. gas."

Did he think concerted effort by groups of dealers would be one way to achieve the educational aims?"

"Yes. It goes back to the old adage that 'in unity there is strength.' When a group of dealers within a given area start fighting among themselves, the only ones who are hurt are the individual dealers themselves.

"In this industry, we are not doing enough community relations work. This could be done on an area basis. Many of our people belong to service clubs; this gives them an excellent opportunity to get on the club's program. If they don't feel they want to do it themselves, they can call upon the LPGA; it's our function to assist them. We have a speakers' bureau; we supply the talent. If they want to do it themselves, we'll supply them the material and give them background information.

"And don't forget your employee relations. What the employee thinks of the company he works for has an awful lot of influence on what the community thinks of the company."

One dealer, Mel Price of Waukegan, Ill., used two words to sum up his own personal No. 1 problem: natural gas. "We've lost 600-



Everyone—big dealers and small dealers, suppliers and guests—had the opportunity to record their opinions of the industry.







700 accounts to natural gas already."

Natural gas is also the No. 1 problem of an Indiana dealer. "Natural gas is coming into our towns pretty fast. The towns are expanding out into the rural areas. Electric heating is coming into some of the areas too, but some of the customers are pretty unhappy with it. I don't think it can hurt us as badly as natural gas coming into the smaller areas."

His solution: "We're concentrating on the lake resorts and the rural homes more than ever."

Yet this same dealer felt that one of the industry's biggest needs was to make the people in rural areas "gas-minded." He said, "Lots of the folks in our area are still burning oil; some still have the old coal furnaces. I think a lot of them still don't know what gas is.

"You'd be surprised how many of the people who are using gas are still afraid of it. I think we've got to educate them more, show them how safe it really is."

A rebuttal to the argument that natural gas is the big problem rather than electricity came from a rather surprising source, Raymond Woodward of Western Natural Gas Co. in Jacksonville, Fla. Woodward has had to face a natural gas invasion during the past few years, but he declared: "Natural gas is not our big problem. It's electricity.

"I think the thing that confronts us is not where our growth is coming from; the dealers will always find something new to promote. What we must do is try to keep our domestic business from dying on the vine. We have to fight to hold onto what we already have. The electric people are making big inroads."

As for electricity, Moylan Brown would not worry about it, he would do something about it. "It's a psychological problem. Yes they're going out and doing a tremendous advertising job using that terrible word 'flameless.' This builds a psychological barrier for us; we sit behind the desk and say, 'Well, there's no use going out and trying to sell against it because they've got the market anyhow.'

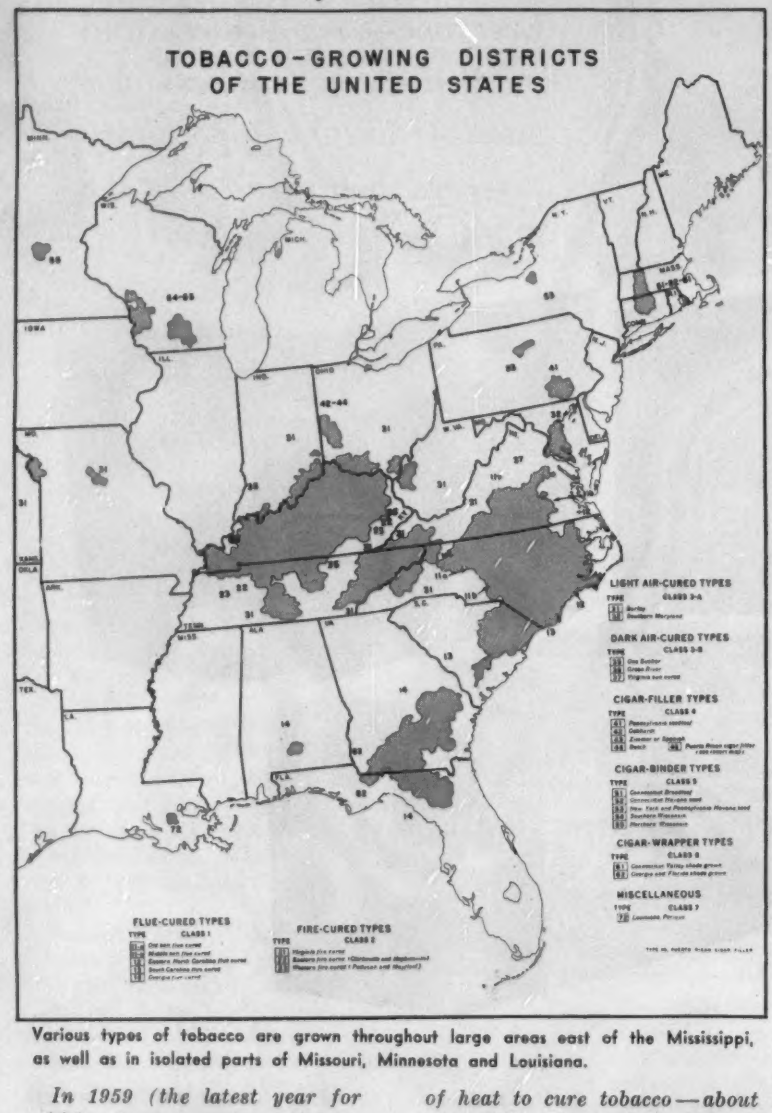
"This is the wrong thing to do. I think if we get out and sell our L. P. gas story half as hard as they're selling the electric story, we're going to make our point. If we just get out and sell, and not sit back and become defeatists, we'll have no real problem."

Would an exhibit at the World's Fair coming up in New York help in any way to build the industry's image and thereby counteract the electric propaganda, the Sel-Pac interviewers asked.

Donald K. Monier of Chester,

(*continued on page* 56)

Here's a load you should "smoke out"



Various types of tobacco are grown throughout large areas east of the Mississippi, as well as in isolated parts of Missouri, Minnesota and Louisiana.

In 1959 (the latest year for which figures are available), close to 490 billion cigarettes were produced in the U. S., according to the 1961 edition of the The World Almanac. *That represents an increase of about 20 per cent for the decade. Further figures (from "A Statistical History of the U.S.") reveal that there are 9.48 lbs. of cigarette tobacco consumed per year per person over 15 years old. Which means, with approximately 339 cigarettes in each pound of tobacco, each of those persons is smoking over 3200 cigarettes per year.*

These statistics are important to a good-sized segment of the L.P. gas industry. It takes a lot of heat to cure tobacco — about 300 million gal. of fuel per year, according to Frank Horne, vice president of Gastobac Co., manufacturer of gas-fired tobacco-curing systems. What is more important, right now 30 million gal. of that load belong to LPG.

And that's only a start. Says Horne, "I think that in five years —at the present pace and expected rate of increase — LPG will have 35 to 50 per cent of the market." That figures out to an annual LPG load of from 105 to 150 million gal.!

Recently, BUTANE-PROPANE News *journeyed to North Carolina, the heart of "tobaccoland," to learn the up-to-date story of this potent load builder.*

TOBACCO

150 million

A SUMMER-LOAD — FAST AMORTIZATION — COMPLETELY PACKAGED HEATING UNITS FOR EASE OF INSTALLATION—these are just a few of the advantages in store for the LPG dealer who takes on tobacco-curing customers. But first, a brief review of the tobacco industry and the curing process.*

It must be understood that for the purposes of this discussion, we are referring in particular to what is known as "bright leaf" tobacco; i.e., that type of tobacco which is generally used in cigarette production as opposed to other types used for cigars and pipe smoking. Each type has its own characteristics as to heat needs, curing times, seasons, etc.

Those parts of the U. S. in which the tobacco growing industry is really flourishing are south-central Virginia; practically all of North Carolina except the far western area; central and eastern South Carolina; central and south Georgia, and north-central Florida. There are also pockets in Alabama, Connecticut, Indiana, Kentucky, Ohio, Pennsylvania, Tennessee, W. Virginia and Wisconsin. Most of these latter areas, however, grow either burley or cigar-type tobaccos. But another big bright leaf area is in Canada, between Detroit and Toronto. Horne estimates that there is about as much tobacco produced there as in South Carolina and Virginia combined.

Bright leaf tobacco is planted in the early spring and harvested in early summer in the U.S. In the

* See BPN, August 1956, for a more detailed report on these aspects.

CURING—a potential gals-a-year business

WILLIAM T. HARPER • Eastern Editor

A BPN Exclusive

previously mentioned Canadian area, it is harvested in the late summer. After harvesting, the tobacco is cured.

For this step, the tobacco is brought from the fields and placed in barns. These barns vary in size but, generally speaking, they measure 20x20x20 ft. Note that these figures are all multiples of four. The reason for that is that traditionally, the tobacco is hung from sticks that are four feet long. Curing is principally a drying-out operation. The natural moisture in the leaf must be removed to have market value.

The primary idea is not to heat the leaf, just dry it out. The natural moisture of the green tobacco must be removed without damaging the basic structure of the leaf, and without taking out valuable oils and gums that help to make it high quality tobacco. This can be done in several ways. One is flue-curing. This merely heats the barn by radiation, and does not dry as effectively as a second method, which circulates more air. This latter is the warm-air method. Utilizing gas heat generation, it forces the warmed air through the tobacco leaves and much more moisture is absorbed. It is estimated that such heating increases the value of the tobacco by 10 per cent by drying it at a lower overall temperature.

Methods of heating the air and making it go through the tobacco to achieve the desired results vary, and so do fuels. Kerosene, coke, wood and LPG are used as fuel for burner stoves. Unfortunately, about 80 per cent of the fuel load for this market is kerosene; LPG has 10 per cent, and the other fuels, the remainder. Fortunately, as farmers and LPG dealers become more enlightened and progressive, liquefied petroleum gas makes greater and greater inroads into this market.

LPG did not come into the picture until shortly after World War II. Even then, it did not take hold for the first three or four years. As late as 1950, there were only about 500 LPG-fired tobacco-curing systems in use. Since then, aggressive selling by dealers and gas-fueled heater manufacturers has brought that figure up to around 30,000. One of the biggest heater manufacturers is Gastobac, Charlotte, N. C.

The biggest problem in getting gas-fired equipment into this market is that those farmers who already have kerosene-burning units are reluctant to get rid of them. They are relatively expensive installations and represent a substantial investment. "However," says Horne, "as those systems wear out, LPG systems replace them. Today, between 60 to 65 per cent of the new system sales are LPG equipment."

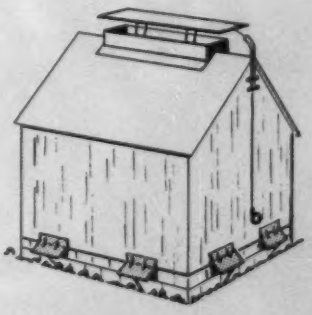
The market potential is enormous. On the average, one curing barn is needed for each three or less acres of grown tobacco. According to Horne, "As long as a farmer has one barn, he's a potential customer." Twenty-five barns would be a small load. Larger dealers serve up to 750 barns. One, Suburban Rulane Gas Co. in Wilson, N. C., has more than 1000.

Some areas have been quicker to convert than others. For instance, about 30 per cent of the farms in Georgia are using LPG systems while less than 1 per cent have converted in Kentucky.

A prime factor in determining such conversions is the price of the fuel. In Georgia, lower transportation costs keep the price of LPG down. It compares favorably with the average price of kerosene there. It is hoped that such a competitive condition will soon exist in other areas; hope is seen in the fact that the planners of the Trans-Southern pipe-line altered their original route to bring the line closer to the tobacco-growing areas in the Carolinas and Virginia.

Still, even if the price is not in itself competitive, LPG-fired systems have points in their favor. Horne points out that these systems sell for about 10 to 15 per cent less than kerosene units. Also, while competing systems are manually controlled, LPG equipment is automatic. Not only does this give the much desired even heat, it also reduces curing costs by eliminating the need for an operator who, in some cases, has to be on duty 24 hours a day to tend manually controlled heaters.

Horne points to fast amortization of equipment costs as being another sizeable advantage for the LPG dealer. Each installation represents an investment from $250



The best curing system is one that will provide maximum circulation of warm air. Vents around the base of the walls of the barn, and on the roof, can be adjusted to assure just the right amount of circulation for each phase of the curing.



This North Carolina barn, with an L.P. gas tank alongside, typifies the trend to LPG for tobacco curing.

Tobacco Curing

to $300 for the dealer. Using an approximate figure of 17 cents per gal for propane in the bright leaf area, Horne estimates a gross return of $80 to $85 per customer per year over fuel costs. Even if he's netting as little as $75, he'll still amortize in four years.

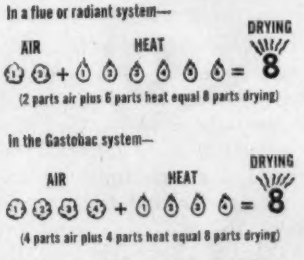
Figures for the sizes of various barns have already been quoted. A medium sized barn needs 12 burners (nine are needed in the small and 16 in the large). A 500-gal tank will supply the 12 burners, which have 600,000 Btu per hr. input. A system such as this uses about 7 gals of LPG per hour running at maximum.

The curing season runs from six to eight weeks in the bright leaf areas and it is a 24-hr per day operation. As one batch of tobacco is cured, it is removed from the barn and another is brought in. Thus, each customer provides the LPG dealer with roughly a 1000 gal. load per medium barn annually.* Obviously, at this rate, it does not take long for a dealer to build a sizeable load.

One of the most successful dealers in LPG for tobacco-curing is Bill Probeck, president of the Town and Country Gas Co., Goldsboro, N. C. During the last curing season, T&C put approximately 400,000 gals of propane in tobacco barn tanks.

A load of those proportions is not built overnight. Probeck got into this field in 1952; that first year he had only seven curers on propane. At last count, there were approximately 400. Most of these units are supplied via 500-gal tanks, although some 1000-gal tanks have also been installed. It is the feeling at T&C that one 500-gal tank will serve two small barns operating alternately but it would barely suffice for a medium-sized barn. Most of Probeck's customers have anywhere from one to 12 curing systems on their farms, but a few have from 50 to 100.

The ease with which the systems are installed is a factor that makes this business so appealing to T&C. The units (Gastobac in this case) are delivered to the dealer completely packaged. This includes the necessary piping, regulators, stoves, etc. George Sawyer, T&C's service manager, estimates that it should only take two men about four to five hours to make the complete installation.



Here's why LPG is best for tobacco curing: with direct firing, more air can be circulated, less heat is needed.

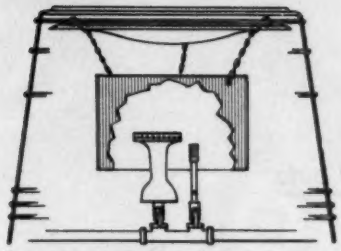
First, the stoves are placed in rows in the curing barn. The burners are placed so that the centers of these burners that are on the outside rows will be about 25 in. from the nearest wall. Burners are spaced 5 ft apart. The tank is set at a minimum distance of 10 ft from the outside wall of the barn.

T&C uses two-stage regulation to cut down the pressure to 14 in. w.c. The piping from the tank to the burners, which is ½-in. galvanized, is buried about 12 to 15 in. underground and the tank is set on concrete blocks. A spirit level is used to make sure they are even. A standard service truck is



Here's how the gas stoves are situated in a typical curing barn. A medium sized barn requires a dozen such units.

* The burners use about 7 gals of propane per hour when they're running at maximum, but they are at their maximum output for only a few hours a day. The rest of the time, they are cut back so that they only increase the barn temperature to approximately five degrees above outside temperature.



Above is a cutaway of the wire guard model burner, which is shown in the photograph on the previous page.

used for carrying the equipment; a trailer on the back hauls the tank.

Some dealers substitute a manifolded cylinder installation in place of a bulk tank (see BPN, July '59, Page 33 for description of such manifolding).

Filling the tanks (and/or cylinders) is a real problem in jobs such as these. As noted, the tobacco-curing load is compressed into a brief period. It is all-or-nothing in about five to eight weeks. The burners are going 24 hrs. a day and so must the LPG dealers' trucks and personnel. Town and Country has five trucks—a twin 1800-gal. w.c.; a 1900-gal. w.c.; a twin 1400-gal. w.c., a 700-gal. fill-in truck, and a 2300-gal. rig. These trucks serve an area with a radius of 30 miles from each of three plant locations in Goldsboro, Tarboro and Kinston.

The twin 1800-gal. truck can supply four to five barns on one trip; the 1900-gal. rig can make five to six stops, and the twin 1400 makes three to four deliveries. During the "big push" of the season, each driver averages more than two round trips per day on a 10-hr. shift.

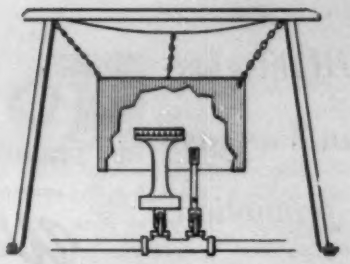
One of the ways Probeck tries to overcome the "big push" is through advance filling of the tanks. Gas is delivered for the curers in May. Once the season gets underway, each customer is checked and filled each week on a route basis. Before the first propane delivery of the season, T&C sends its servicemen out to check and clean each customer's equipment. This is made necessary by the fact that it is used for only a short period each year and then stands idle. Many things can happen to it during this period. The biggest maintenance problem is broken burner valves, caused by carelessness.

The biggest in-season problem, Sawyer reports, is that farmers often complain about not being able to get the heat up to the desired temperature. This is usually due to improper ventilation, which again is caused by the long periods of idleness. During such times all manner of debris piles up against the side openings of the barns, cutting off the air passages. Once these are cleared, along with the roof ventilation, the problem is relieved. At the same time, the orifices are checked to make certain they are not clogged. Even so, it is necessary to have two servicemen on 24-hr. call all during the season.

The units are sold in various ways by T&C. First of all, the company uses free-lance salesmen; it does not have regular, salaried salesmen. But, Sawyer states, the biggest selling factor is regular company personnel. A commission is paid for each sale and T&C people are even given time off from their regular duties to close a sale with a "hot" prospect. Servicemen also make sales pitches when they are working on appliances at a farm.

The old use-a-user technique is often employed. There is no one a farmer would be more likely to believe than another farmer. One's recommendation to another is almost certain to eventually lead to a sale. And it usually is not too hard to convince the farmer that he should convert to an LPG-fired system. He realizes that the soot must frequently be cleaned out of the pots and the flues. Not only does the soot hamper the burning equipment, but it also dirties the tobacco. Wicks need replacing often. Sawyer estimates that about 35 per cent of the company's new sales come from farmers replacing oil-burning units on the recommendations of those already using the LPG equipment.

One final problem the LPG dealer might face in this market is the attitude of the farmer who keeps putting off the purchase of a tobacco-curing installation until the last minute. Sawyer likened it to sales of air-conditioners; it seems that no one buys one until he is in the midst of a heat-wave. The same is true of the farmers. "The biggest demand for the installations is during the curing season." Sawyer says. "The farmers usually wait until they see what their tobacco crop looks like before ordering new burners. Then they push like mad to get them." During the height of the 1960 curing season, T&C installed approximately 100 systems.



This burner was engineered for curing heavier grades of tobacco, where a greater concentration of heat is needed.

To help overcome this problem, Town and Country Gas Co. stocks about 50 complete installations before the season opens. It is the company's experience that a farmer will usually order one or two installations at first, merely to try them out. Usually, that is all it takes to convince him to convert.

Oddly enough, it was Mother Nature at her worst that was T&C's biggest ally in getting the sales program really underway. Sawyer recalls that when the infamous Hurricane Hazel roared up the East Coast in 1954, much of the old-fashioned, oil-burning equipment was destroyed. A tremendous selling effort by the company followed and many farmers converted at that time.

Just to add the final frosting on the cake, Probeck's company has discovered another advantage to the sale of propane-fired tobacco-curing systems. It seems that once the farmers become aware of the extreme advantages of the clean burning LPG, they convince themselves that this is the ideal fuel for all their appliances around their home and farm. ■

A reprint of this article can be obtained by writing on company letterhead to the Editor, BUTANE-PROPANE *News*, 198 S. Alvarado St., Los Angeles 57, Calif.

Highlights in Vangas' promotion program



ADVERTISING

Newspaper insertions are the backbone of Vangas' promotional programs.



BILLBOARDS

Although the company uses all kinds of media, it has found that billboards are about the most effective.

Vangas found out:

To grow from got to

B. E. LOVELL

CAN A LARGE L. P. GAS MARKETING COMPANY *really* GROW WITHOUT MERCHANDISING APPLIANCES?

Some have tried it, with varying degrees of success. And some who tried it have reversed their policies; they have found out that, if they are to have the kind of growth they want, they must build their *own* load.

Such a company is Vangas, Inc., headquartered in Fresno, Calif., one of the nation's larger LPG concerns.

When Van Horn Butane and United Liquid Gas were merged seven years ago to form Vangas, the two companies together were doing an annual appliance business of $500,000. But the management decided that the new concern would be merely a gas distributing com-



DEMONSTRATIONS

Last year driver-salesmen for Vangas sold 650 of this particular model during weed-burner campaign.



COUNTY FAIRS

The county fair is another way of promoting by Vangas. The company conducts a completely integrated sales program.

within, you've merchandise

pany, not an appliance merchandiser, so it gradually began to get out of the appliance field. The only exception to this policy was that the company let local managers continue to sell appliances if they were already doing a good job.

For several years, due to rapid expansion through acquisition, no one at Vangas questioned the decision. Then, as expansion through acquisition slowed down, Dick Bragg, vice president in charge of sales for Vangas, Inc., noticed that the recently acquired Intermountain Division of Vangas was doing a terrific job of merchandising. And he also noted that, despite a comparatively static population in the division's area, Intermountain's load was growing at a healthy clip.

Putting these two facts together, Bragg took a second look at Vangas' policy and came to this conclu-

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sion: *Not only was Vangas overlooking a very important source of additional revenue by neglecting the merchandising aspect, but this policy was stifling the internal growth of the company as well.*

And then, just about the time he had reached this sobering conclusion, the Fresno office received an order for a *carload* of heaters from the Intermountain Division's sales promotion manager, Dick Thatcher.

Many of the officials at Vangas thought the order must be a clerical error: Thatcher must mean a truck load, not a *carload*, they reasoned.

Dick Bragg, who had been observing Intermountain's merchandising efforts carefully, wasn't so sure. He got on the phone and talked with Thatcher, who insisted he knew what he was doing. So Bragg backed him up and the carload of heaters was ordered.

The payoff came a couple of weeks after that first carload reached Idaho. Thatcher sent an emergency order for another one.

The first shipment was almost gone, he explained, and orders were piling up so fast he was sure they could get rid of twice as many. And they did.

Coming as it did, just at the time when Dick Bragg had already reached the conclusion that it had been an error to neglect merchandising appliances, this demonstration provided the spark that was needed to reverse a company policy that had been in effect several years.

"As soon as we really examined this policy in detail," Bragg recalls, "it became evident that it was self-limiting, if not actually self-defeating."

So Vangas reentered the appliance merchandising field. And, as is characteristic of this vigorous L. P. gas concern, it came back so aggressively that for the past two years, it has had an internal growth pattern of around *20 per cent per year!*

As might be expected, Thatcher was brought down out of Idaho to the main office in Fresno, to head up sales promotion and training for the entire company.

Thatcher, a young, enthusiastic, sleeves-rolled-up type, operates on two general theories:

1. He believes that even a poor-



MECHANICS' SCHOOL

Herb Frambes (in white shirt) of Century Gas, conducts schools in the off-season for mechanics from large ranches.



. . . AND PROMOTIONS GALORE

Dick Thatcher, director of sales promotion and advertising, studies a line-up of truck cards used to support the various programs.

ly conceived and executed promotion beats no promotion at all, and

2. He knows that no one salesman, even a really good one, can sell enough appliances to bring more than a small gleam into the bookkeeper's eye in an operation as large as Vangas, but that 300 salesmen, doing only a moderately good job as individuals, can make that same bookkeeper's eyes light up like a Christmas tree.

So about the first thing Vangas did when it reversed the policy on merchandising appliances was to make every driver a salesman, rather than a deliveryman.

When he launched his program, Thatcher was faced with a dilemma: Should he put his men right to work selling specific promotions, with no training, or should he train them first and hold up promotions until they had acquired the necessary skills.

He decided to do both at once. Before each major promotional campaign, he holds a series of meetings to acquaint the drivers with what is being promoted, how it is being promoted by the home office, and how they can sell it most effectively.

Backed up by a driver-salesman incentive plan which appeals both to the man's pocketbook and his sense of pride, this in-promotion training program has worked amazingly well.

Here are some of the major promotions, and how they are planned and executed:

Carburetion

The carburetion promotion this year was run in March. These were its principal features:

• A mechanics' school. This was held at the Vangas shops in Fresno. Mechanics and other personnel from the large ranches were invited to attend.

• The sales meetings. These are conducted by a carburetion expert. Occasionally, a large user of LPG is invited to sit in; this brings him in "behind the scenes," which increases his confidence in the application, since no effort is made to sell *him*.

• Selling aids. Before the campaign begins, each driver-salesman is given a mimeographed information sheet. This lists prizes and quotas, campaign details, and types of carburetion prospects. These latter include such varied markets as local delivery trucks, garbage trucks, cement mixers, tractors, farm pickups, and taxicabs.



Driver-salesmen wear this badge during the water heater promotion.

For this year's campaign, a quota of 150 units was established. The men topped it by 50. Most of these units were sold to farmers for their tractors and trucks. But cement mixer motors, surprisingly, ranked second, while cabs ran third.

• Promotion and advertising. To back up driver-salesmen efforts, Vangas enclosed stuffers with the March 1 statements, put truck cards on all trucks in the latter part of February, and ran ads offering "Up to 200 gallons of fuel *free*." Persons who converted their tractor or truck, if it exceeded one ton, were given the maximum. The conversion of a car or pickup was worth 100 gals., forklifts, 50 gals. Customers paid any state or federal highway or use tax.

Weed burners

Vangas has found that, unlike weed carburetion, weed burners must be sold during the season. Therefore, this year's campaign is running from April through July.

• Sales meetings. Kickoff meetings were held in mid-March. Slides were shown to demonstrate why a farmer should have a weed burner. Other slides demonstrated the best techniques for using the various types.

• Selling aids. Mimeographed information sheets listed quotas and prizes, for both individual and area effort. A point system was established, ranging from 50 to 750. The sale of a Handiman burner was worth the maximum, 750 points; a single jet with 3-ft. burner and hose, 250 points; the Super "8" burner and hose, 500 points. Points were even given for simply *trying* to sell—50 points per demonstration, up to a maximum of five.

As Thatcher says, "The man who is not a polished salesman often sells lots of weed burners just by demonstrating them at the customer's home or ranch. But he's often hesitant to try. We're giving him an incentive; once he makes a few attempts (at 50 points each), he finds it's easier."

The Super "8," incidentally, is the No. 1 seller. Last year, Vangas employees moved 650 of them.

• Promotion and advertising. Stuffers were enclosed with the April 1 statements; ads were inserted in "California Farmer," beginning at the same time; and a free one-day equipment rental was offered to any qualified prospect.

Early Bird Heater Campaign

Like the carburetion campaign, this is another off-season sales effort that has worked extremely well for Vangas. It has worked so well, in fact, that Thatcher declares, "We'll have to increase our on-season efforts, in order to keep up!"

Getting under way in July and August in the Intermountain Division, the Early Bird Campaign runs through September and October in California.

The driver-salesman's incentive is a cash bonus of from $2.50 to $10 per unit sold. To qualify, he must sell it at or above the sale price, and normal installation charges must be made. The unit must be billed and some reasonable down payment made by the time

the Early Bird Campaign closes, and it must be installed and/or under contract or otherwise paid for within 30 days after the campaign closes.

If one employee fills out an official prospect slip, and another closes the sale, the bonus is split 50-50.

In the event one prospect is turned in by two employees, the bonus is given to either the one who correctly lists the appliance sold or the one who turned the slip in first.

Two schooling sessions are held in connection with this campaign, as well as the regular kick-off sessions. The first is a controls school, where service information, installation procedure, and specific sales information about the units being featured are given. The second school is of a more specialized nature, and attendance is limited. At this session, driver-salesmen are taught heat loss calculation, metal work, and other more advanced procedures.

It is Vanga's policy to limit the number of brands featured in these sales campaigns, the maximum is usually two of each item. There are two reasons for this: first, it is less confusing for the driver-salesmen, who can learn the main advantages of two brands of heaters, say, without difficulty, but would have trouble with more; and, by limiting the number of brands and promoting aggressively, suppliers "knocking themselves out" to get on the bandwagon.

Dryer promotion takes place in November and December, and while in California this particular promotion is probably Vangas' least successful, it has gone extremely well in the Intermountain Division. There, 75 to 100 dryer and combos have been sold each year for the past several years.

The toughest promotion of all

During January and February, Vangas tackles the toughest promotion job of all—*ranges*.

But, just because it *is* tough, it is the most important campaign of all in the implications it has for the industry as a whole, since in this campaign Vangas takes on the industry's major competitor, the electric company.

There is no disguising the fact that the electric companies have been doing a good job. They're out to make the L. P. gas industry earn every part of its load. Everyone knows this, but too few dealers are doing anything to counteract this pressure. Vangas is an exception.

The company is going into the high schools out in the rural areas and battling electricity with its own weapon, the cooking school.

Dick Thatcher, realizing what was at stake several years ago, took the time to learn the art of giving a cooking school demonstration. And now, when January rolls around, despite his heavy work schedule, he loads a range into a pickup, conscripts an assistant, and sallies forth to the schools.

To arrange a cooking school demonstration, he first contacts the high school superintendent, who usually sends him on to the principal, who in turn arranges for him to meet with the home economics teacher. This series of meetings usually takes place about one month before the actual cooking school is to be held. This gives Vangas sufficient time to publicize it, and arrange a suitable date.

Thatcher has his own pots and pans, and he puts a mirror over the range for dramatic effect. His whole demonstration takes only an hour because "that's about all the time the schools like to have you use, and it's difficult to hold attention longer than that, anyway."

But during this hour, he manages to cook an egg in a paper plate, bake a cake in a skillet, and do other feats of cookery designed to show the "controllability" of LPG all the while carrying on a light sales patter. Meanwhile his assistant watches his timing for him, so he won't get off schedule.

The results of this promotion are not as spectacular, surely, as the 500 water heaters sold each year for two years running or the two carloads of heaters. But it could be that this is a solider accomplishment in the long run. For, as Thatcher points out:

"We get the 16 year old girls in these high schools to go home and sell their parents—and they do an amazing job of it, too.

"Then, a few years later, when the girls are married and setting up a home of their own, we get them, too, nine times out of 10, if they stay in the community.

"There is no doubt about it, this is the toughest sell in the whole appliance merchandising field, but it's a job that has to be done, if we're not to just let the electric companies have our whole domestic load—

"And we, here at Vangas, aren't about to do that."

To back up the various promotions, Vangas has used all media for advertising: radio (spots), television (increasing rates and less results have caused Vangas to cut TV advertising drastically, using only as much in a year now as they once did in a month), newspapers, billboards (they are real high on billboards), farm magazines, and direct mail. Mailers are sent not only to the usual prospects, but to architects, builders, and the Department of Interior, which makes plans and purchases for the nation's parks and recreation areas. In addition, truck cards (which are either the same as billboards, or tied directly to a given campaign), display material to help build traffic in local stores, and displays at county fairs (and even in grocery stores, on occasion) are used with effect.

In short, Vangas, Inc., is carrying on a company-wide, completely integrated merchandising policy, designed to sell more L.P. gas using appliances, so that Vangas can sell more gas.

And though the recent acquisition by Tidewater of a controlling interest in Vangas, Inc., undoubtedly means expanded facilities for gas distribution, probably ushering Vangas into the wholesale business, as well as retail, we would give odds that this company will continue to merchandise with as much vigor as it is today. ■

A reprint of this article can be obtained by writing on company letterhead to the Editor, BUTANE-PROPANE *News*, 198 S. Alvarado St., Los Angeles 57, Cal.

Stimulating idea exchange marks BPN's 10th sales roundtable



The 10th sales roundtable was the biggest yet, drawing 79 participants from all over the nation.

WILLIAM T. HARPER • Eastern Editor

THREE QUESTIONS OF VITAL INTEREST TO THE LIQUEFIED PETROLEUM GAS INDUSTRY and the answers to same formed the theme of BUTANE-PROPANE *News'* 10th Roundtable session in Chicago on the eve of the opening of the National LPGA Convention. BPN Editor Bill Clark told more than 70 LPG dealers, producers and manufacturers attending the luncheon meeting that, "We're not here trying to solve the world's problems. We're just trying to stimulate ideas that will be beneficial to our industry."

With the answers to Clark's questions stimulating such ideas as getting the dealers "into the telephone business," improving unity programs, and "new standards of health," it was the overwhelming consensus of those attending that the objective was 100 per cent accomplished.

The three questions put to the group were: *1.* What is the broad picture in gas unity achievements? *2.* Is the liquefied petroleum gas industry aware of the electric heat competitive problem? *3.* What is new in gas utilization equipment?

In answering Clark's first question, W. A. Schuette, Petrolane Hausgas, Inc., mentioned three gas unity programs which he felt had been highly successful. The first was the Minneapolis plan; the second was the Milwaukee program, and the third—which he felt was most successful—was the recently inaugurated East Ohio Gas Co. plan.

In this third plan, he told how an LPG dealer can get up to $140 from the Cleveland utility when it takes over one of the dealer's customers. The plan's payments are based on a pre-determined amount of dollars for each gas utilization in the home. An all-gas home (i.e., with gas heating, cooking, water heating, incineration, etc.) would, therefore, net the dealer $140.

The utility makes only two stipulations. First, the home must be piped to specifications acceptable to natural gas utilization. Second, the dealer must register the customer in advance with the utility. Schuette termed this, "The most liberal plan I've seen or heard of anywhere."

A. R. Olson, president of the Protane Corp., confirmed this opinion by noting that East Ohio is even going further by paying the dealers $15 for each of their customers it takes over even though such customers belonged to the dealer prior to the start of the program.

Ralph Sieben made the most revolutionary sales proposal yet—a "telephone company" equipment installation program.



"Twenty-six dealers will divide up a 33 million gal. flaming load in my area," declared Bill Taylor.



An interesting point regarding all unity plans was brought out by William S. Brenckle, president, National L.P.gas Corp., Waukesha, Wis. In trying to formulate any unity plan, he said emphatically, "you've got to show the utility how you can help them!" He then went on to describe the Milwaukee unity plan in which the LPG dealers and the Milwaukee Gas Light Co. have a unified advertising program.

This has lead to the point where now the utility pays Brenckle's company to take over and service domestic customers with L.P. gas until it can move mains into the area. Brenckle is actually selling his fuel to the utility and it in turn charges the customers.

P. A. Gass, senior vice president of the Northern Natural Gas Co. in Omaha (this company also has extensive LPG operations), came up with a stimulating suggestion. "All of these plans we've heard about so far," he noted, "are involved with fairly large-sized utilities. I think we should start looking for a plan that would work with the small utilities. It would be a basic plan; one that would need only slight revisions to be applicable in any area. Such a plan must emanate from the liquefied petroleum gas industry." Suggestions, anyone?

The second question put to the group by Editor Clark—do you feel that our industry is aware of the electric heat problem—boiled down to an enthusiastic affirmative. However, most present were concerned about the matter of ethics, or lack thereof, on the part of the kilowatt competition.

After Lee Brand of Empire Stove Co. cited a number of statistics (how the American Gas Association's budget to combat this intruder has grown from $38,000 in 1958 to the present $633,000 vs. $7½ million to promote the Gold Medallion home), Pyrofax' C. F. Jenkins brought in the matter of ethics. He recalled how the electric industry used to provide gas customers with canaries as a "precautionary" measure (the idea was, if the canary didn't die of asphyxiation, the persons in the home could feel relatively safe); how it filled an oven with un-burned gas and then exploded it. As an answer to these practices, he advocated that



A stairstep pattern was provided by Bill Clark, Phil Harper, Forrest Fram, and Bob Montgomery.



Walter Schuette and Tom Ennett discussed Gas Unity programs.



Willard Johnson explained why the gas dishwasher is best while H. T. Anderson gave tacit approval. Chet Attwood at right.



Beverly Spatz, Mae Aucello, and Gussie Spears had Mike Spatz and Bill Harper pleasantly surrounded.



Joe Rose told why he likes the East Ohio plan. At left, Gene McDonald. At right, Bob Hemphill (partially hidden), George McFadden, Dick Duffy.



Norman Stark said his tests showed superiority of LPG.

Tom Quail had high praise for the Milwaukee Unity program. The others are Bob Ensign, Dick Freiermuth, Er Kleinmann (background), John Wallace, Bill Clark and Bill Brenckle.

L. P. Hine showed off the heart of the thermoelectric system that powers a furnace fan.





WHO WAS THERE

. . . at BPN's 10th sales roundtable

J. E. Allen, North Texas Tank Co.
H. T. Anderson, Preway, Inc.
Chet Attwood, Arkla Air Conditioning
Mae D. Aucello, Suburban Propane Gas
W. A. Barker, North Texas Tank Co.
John Bise, Triopane Gas Co.
E. B. Blackman, Corken's, Inc.
Wm. Blanchard, Pet-Gas Co.
Jay V. Blount, Central Iowa Service
Gil Bowman, BUTANE-PROPANE *News*
Lee Brand, Empire Stove Co.
W. S. Brenckle, Natural LP-gas Corp.
Jimmie Brown, North Texas Tank Co.
F. M. Chapman, BUTANE-PROPANE *News*
Bill Clark, BUTANE-PROPANE *News*
Marshall Cook, Rockwell Mfg.
Charles Corken, Corken's, Inc.
Bernie Cox, Rockwell Manufacturing Co.
Van A. Cummings, Union Texas Natural
R. H. Davis, Birmingham Stove & Range
Dick DeMuesy, BUTANE-PROPANE *News*
F. A. Dragoun, Dri-Gas Co.
Dick Duffy, BUTANE-PROPANE *News*
T. E. Ennett, Rockford Propane Co.
R. P. Ensign, American Bosch Arma
F. L. Fagen, Gem Automatic Gas Co.
Forrest Fram, Framgas, Inc.
R. H. Freiermuth, Phillips Petroleum
Gaylen Frey, Modern Equipment, Inc.
P. A. Gass, Northern Natural Gas Co.
J. W. Gotcher, Gotcher Engineering
Joe Geryk, BUTANE-PROPANE *News*
Phillip Harper, Harper-Wyman Co.
Bill Harper, BUTANE-PROPANE *News*
Jack Hartzell, National LP-gas Council
Neile Havens, Uregas Cos.
James Hayes, National LP-gas Council
R. M. Hemphill, Interurban Gas Co.
L. P. Hine, C. A. Olsen Manufacturing
C. F. Jenkins, Pyrofax Gas Corp.
Willard Johnson, Preway, Inc.
E. R. Kleinmann, Dearborn Stove Co.
Jack Kofron, Chilton Co.
Charles Link, Lin-Gas, Inc.
R. E. Littell, Littell Gas Service Co.
T. F. McCormick, Dri-Gas Co.
Gene McDonald, E-Town Propane, Inc.
G. H. McFadden, Ohio Foundry
Wm. McHenry, Pro-Gas Sales & Service
Don Miller, Union Texas Natural Gas
J. R. Montgomery, Coleman Co.
A. E. Olsen, Protane Gas Co.
H. A. Pemberton, Allen Butane Gas Co.
James R. Polston, Tuloma Gas Products
T. H. Quail, Bottled Gas Corp.
R. E. Rasmuson, Uregas Service, Inc.
B. M. Reeves, A & O LPG Co.
E. A. Reutner, Red-E-Gas
John J. Rose, Propane Industrial Service
John Russell, Pyrofax
W. A. Schuette, Hausgas, Inc.
Dr. E. B. Shultz, Institute of Gas Tech.
Ralph Sieben, Metrogas, Inc.
Jerry Smith, BUTANE-PROPANE *News*
John Knox Smith, Metrogas, Inc.
Bill Smyth, BUTANE-PROPANE *News*
Beverly Spatz, Spatz Paint Industries
Michael Spatz, Spatz Paint Industries
Mrs. Gussie Spears, Baker Liquid Gas
Cecil Squibb, Squibb-Taylor, Inc.
N. H. Stark, N. H. Stark Corp.
Dean Stutzman, Propane Industrial Ser.
R. A. Swan, Dri-gas Co.
W. R. Taylor, Gene Bumpus Butane
P. W. Voss, Red-E-Gas
John C. Wallace, Petrolane
Ralph Weaver, Weaver Gas Service
Sam Wilson, Geo. D. Roper Corp.
R. C. Woodward, Western Natural Gas

the L. P. gas industry "get offensive on the offense."

Ralph Sieben, president of Metrogas, Inc., went even further as he announced a "brand new idea." Coming to the rostrum and taking the microphone, he dramatically advocated that the gas industry "go into the telephone business!" He then proceeded to explain that statement to his rather astounded audience.

"Like the telephone industry, we in the gas industry should furnish the appliance to the customer," he exclaimed. His point was that the dealers should provide the customer with the appliance, thereby insuring the gas load. "Take, for instance, a $300 gas range," Sieben appealed. "The cost to the customer would be the gas bill plus some cents forever to pay for the range."

He said he was not talking about a buy-back or a lease plan. "Our biggest problem," he reminded his listeners, "is initial cost, particularly on heating. Our job is to beat the original cost." How could this be done? Sieben was of the opinion that investment houses could be convinced of the wisdom of providing such monies. He cited the fact that they have already put almost $50 billion in investments in the mains, regulators, etc., of the natural gas industry. Sieben felt investment houses would be willing to stand behind appliance financing.

While the audience was still pondering Sieben's unusual proposal, Clark reiterated the third question: What is new in gas utilization equipment? Flame cultivation, gas-fired dishwashers and that vast, almost mysterious field of energy conversion provided the answers.

W. R. Taylor of Gene Bumpus Butane, recalled that at the 1960 BPN Roundtable session, several questions were raised regarding flame cultivation. Among them were: *1.* Can it kill the weeds and not the crop? *2.* Can you flame a crop and not hurt its maturity date? Having put another year's work into this application, Taylor answered both of these questions with an emphatic, "Yes!"

He then went on to extoll the virtues of such a load for the LPG dealer, citing in particular the fact that it is a July-August load in most areas. "And that load is there for the dealer," Taylor exclaimed. "Why, in the county I live in in Texas, there's a potential load of 33 million gals. for 26 dealers. Not only that," he continued, "but the farmers are away ahead of you dealers in their acceptance of the principles of flame cultivation. Labor conditions have put the farmer in the right frame of mind to accept it. All you dealers have to do is to investigate the use of LPG for flame cultivation and you'll accept it, too."

From food to dishwashers is a logical step and Willard Johnson, Preway, Inc., took it. First he asked the question—Why is a gas dishwasher better than an electric?

and then he proceeded to answer it. "First and foremost," he said, "the washability of a gas dishwasher far exceeds that of any others." Citing tests conducted by the University of Wisconsin, Johnson noted that a General Electric dishwasher was reported as being about 66 per cent effective—in the laboratory—and 33 per cent effective in the home. Whereas, the gas dishwasher was reported 100 per cent effective.

Continuing, he brought in another angle that LPG dealers should consider when selling gas dishwashers. "We have brought new standards of health into the homes with the gas dishwasher," Johnson claimed. "In four-tenths of a second, a gas dishwasher removes all communicable diseases because the final rinse temperature is a constant 180 deg F, unlike electric models which operate on tank temperature (and that might even be cold)."

From the present utilization of L.P. gas, the discussion swung over to the future. Dr. E. B. Shultz, Jr., Institute of Gas Technology, brought the four-hour session to a close by enlightening the group on the progress of various energy conversion projects.

Speaking first of fuel cells, Dr. Shultz, who heads up a study being conducted on fuel cells for the American Gas Association, told how they are technically feasible with natural gas, "which would make them a cinch for L.P. gas." Fuel cells are coming out of the research stage and into the prototype stage, according to Dr. Shultz. "Right now, it's merely a matter of economics for adoption and merchandising," he revealed.

He then cited the use of gas in the thermoelectric field as being "much more immediate." The manufacture of a domestic heating plant utilizing thermoelectricity to power the fan was brought to mind. From there, Shultz touched briefly upon thermionics and MHD (magneto-hydro-dynamics), which is a large-scale power generation device. "The first three," he concluded, "are those to watch in the next decade."

On that bright note, with its implications of unlimited growth in the future of the liquefied petroleum gas industry, the meeting was adjourned. ■



Ray Woodward kibitzes as Charlie Link and Forrest Fram compare notes before the meeting starts.



Lee Brand gave a plan for action.



Andy Olsen makes a point on Gas Unity as Neile Havens, Raz Rasmuson, and Lee Brand meditate.



All heads are turned to hear Gaylen Frey's thought-provoking comments.



Jay Blount and Marshall Cook interrupted a chat to pose for the cameraman.



Dr. Schultz discussed direct energy conversion.

John Russell makes a point from the floor. Others discernible: Neil Havens, Raz Rasmuson, Charley Jenkins, Lee Brand, Ralph Sieben, John Knox Smith, John Bise.



That's all, folks, said Frank Chapman with a "thanks."



"We help prove that gas is innocent"

says **W. L. THOMAS**
Southern Technical Institute, Chamblee, Ga.*

"Was gas at fault?" is a question frequently asked after a fire. The answer may be found through scientific investigation such as is conducted at Southern Tech.

THE SHRILL WAIL OF A FIRE SIREN began in a small Georgia town late one night. Volunteer firemen and townspeople gathered to help fight the blaze, which was rapidly gutting a new, small residence.

A neighbor was holding the two young children of the couple on the front lawn. Other neighbors helped move the furniture and prized belongings out of the house so that something could be saved. The flame and heat became so intense that further efforts were abandoned.

In a few short minutes the pride of this young family had been reduced to blackened, water-soaked rubble. The fire department had acted rapidly and had done a good job, but the rapidly spreading fire was not denied until it had reduced the home to nothing.

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The family spent the night with neighbors wondering why this disaster should have struck them. *The question, "Why?" was to be asked by many persons within the next few days.*

The next morning the fire chief revisited the burned home and poked through the ashes looking for some clue that would indicate how the fire started. He asked questions of the family and of the neighbors.

"What were you doing when the fire started? What gas and electric equipment was operating? What condition was your wiring in? Did you notice any odor of gas before the fire? Did you have any flammable fluid stored in the house? Were you smoking?" These were only a few of the questions he asked.

Next the insurance company sent out an investigator. He too, went through the rubble of what was once a home. He asked all the same questions, and more.

The fire chief and the insurance investigator compared notes. They began to develop theories as to the probable cause of the fire. Possibly it was faulty wiring, possibly some malfunction of the gas system. An explosion and arson were ruled out. So was smoking; none of the family smoked. Still the question remained, "What caused this fire?"

The fire chief, the owner of the house, and the insurance inspector decided to request expert help from the state fire marshal. He will investigate a fire if requested to do so. He sent an investigator to the scene of the fire.

His man made a thorough investigation. With his trained eye and past experience, he was able to discern small things which to the untrained person would mean nothing. Pieces of equipment were collected and studied. Those the investigator could not prove were not involved in the cause of the fire were brought to Atlanta for a thorough scientific analysis by experts in the various fields.

One was a regulator on the propane system. It was felt the part might have malfunctioned so it was carefully disconnected and sealed and brought to Atlanta. The next morning the state fire marshal called on the Gas Fuel Technology Department of Southern Tech, a unit of Georgia Tech.

Now the testing began. It had to be absolutely objective. All findings had to be accurately recorded and

* Thomas is head of the gas fuel technology department at Southern Tech.

interpreted by a trained experimenter. Possibly the findings would be presented in a court; possibly they would start a more complete investigation that might show that a change was necessary in the codes for installation; possibly they would mean that a dealer who had not followed the code would be heavily fined. More important, if some malfunction in the equipment was discovered, measures could be taken to prevent it from happening again. There are many ramifications to an investigation of this kind.

The first procedure involved a close inspection of the outside of the unit. A regulator of the same type, proved to be in good working order, was kept close at hand. A strong light was played on the unit being tested and a magnifying glass was used to inspect the entire outside of the unit. To make certain that the experimenter had missed nothing, two advanced students also inspected the unit. The findings of each was not made known until all had inspected the unit. Result: a big nothing. The outside of the unit was in good condition. It had no cracks; the atmospheric vent was completely free of obstruction; the threaded connections were in good condition.

Next came a flow test. The unit was connected to a regulator test board (see photo). High pressure air (from 30 to 150 psig) was connected to the inlet side of the unit. A pressure gauge which had previously been calibrated was connected to the inlet side. A water manometer was connected to the outlet side where a calibrated orifice was installed to control the flow from the unit.

At the highest inlet pressure encountered, the regulator should have a lock-up pressure (the outlet pressure with no flow) not to exceed 13.6-in. wc. The lock-up pressure at 150 psig was only 13.1-in. wc., within the tolerance limits. At the lowest inlet pressure, the unit should have a lock-up pressure of not less than 9.6-in. wc. The lowest inlet pressure normally encountered in this area is about 30 psig; this unit had a lock-up pressure at 30 psig of 9.8-in. wc.

Next, flow tests were made and compared to the flow curves published by the manufacturer. This was done to insure that the unit was operating as it should. The flow curves did not follow the manufacturer's curves. Now the experimenter had to make a decision based on past experience as to whether this indicated a serious fault. The deviations were small and consistent; they were adjudged to be of no consequence. It was impossible to conceive that they could have in any way contributed to a malfunction of the unit which would have caused a fire.



Prof. W. L. Thomas shows students, Stan Surawski of Chile and Richard Alley of Georgia, how to use the regulator test-bench.

According to NFPA Pamphlet 58, the regulator should relieve at a pressure not less than two times nor more than three times the delivered pressure. Pressure was introduced into the low-pressure side of the unit. It began to relieve at 25.4 in. wc. and was fully relieving at 31.2 in. wc. The relief unit was working satisfactorily. The regulator did not build excessive pressures on the delivered side.

The unit was disassembled and closely examined. No water was found in the atmospheric side of the unit; the seat and orifice were clean; the linkage was in good condition. A description of all the tests and the conclusions of the experimenter were written down and a technical report more than 10 pages long was submitted to the fire marshal.

The question was once asked, why should we seek evidence which might hurt the gas industry? This account of an actual investigation provides the answer. The investigation did not hurt the industry or the dealer involved; rather, it showed that the equipment suspected of being defective was working properly. Here is a case to prove that science, applied to problems of this type, can exonerate equipment.

On the other hand, occasionally equipment is found to be at fault. In cases of this sort, it can be redesigned or installed in such a way that it will work properly. This action will save many others dealers from lawsuits and bad publicity in the future.

Then there is the fringe group of dealers who are simply careless in installing gas equipment and who, because of their high accident rate, raise the insurance rates of the responsible dealers. At the same time, they damage the prestige of the entire industry.

The Gas Fuel Technology Department is applying scientific investigation to make the industry safer and better. It might be noted that Southern Tech is the only school in the United States which offers a course in Gas Fuel Technology. In the words of F. E. Robinson, Georgia state fire marshal, "When we have a loss, it is a good one. When we need an investigation, we need a thorough and complete one, and we want one done by experts whose investigative procedures are valid and will stand any court test that may come." Southern Tech is proud to help the gas industry. ■

'61 FORD SUPER DUTY TRUCKS

BROADER WARRANTIES... GREATER DURABILITY... BIGGER CHOICE!

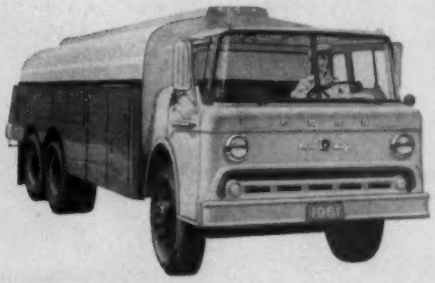


FORD DIVISION, Ford Motor Company,

- **New Super Duty V-8 Dealer Warranty—100,000 miles or 24 months!**
- **New extended Dealer Warranty for entire truck line—12 months or 12,000 miles!**
- **New stronger frames and huskier cabs for Conventional Cab models!**
- **Now 222 money-saving Tilts, Tandems and Conventionals with Super Duty V-8's to choose from!**

Ford's rigid quality control program gives you unsurpassed dependability! Positive evidence of uniformly high production and inspection standards is the exclusive new 100,000-mile engine warranty. On 401-, 477- and 534-cu. in. Super Duty V-8 engines, each major engine part (including block, heads, crankshaft, valves, pistons, rings), when engine is used in normal service, is warranted by your dealer against defects in material or workmanship for 100,000 miles or 24 months, whichever comes first. Warranty covers the full cost of replacement parts . . . full labor costs for the first year or 50,000 miles, sliding percentage scale thereafter.

In addition, an extended warranty covers all 1961 Ford Trucks of any size. Each part, except tires and tubes, is now warranted by your dealer against defects in material or workmanship for 12 months or 12,000 miles, whichever comes first. The warranty does not apply, of course, to normal maintenance service or to the replacement as normal maintenance of such items as filters, spark plugs and ignition points. No other truck gives you such protection for your investment; never before could you be so confident of long-range durability!



Tandem Axle models are available with tilt cabs. As with conventional tandems, aluminum walking beams, wheels, fuel tanks are offered to cut weight.



Most popular Tilt Cabs on the American road! 1961 models represent five years of improvements. Four series—up to 36,000-lb. GVW, 65,000-lb. GCW.



New tougher tandems offer greater strength in chassis, cab and sheet metal . . . new wide-track front end stability. Powered by rugged Super Duty V-8's, Ford tandems go up to 51,000-lb. GVW, 75,000-lb. GCW.

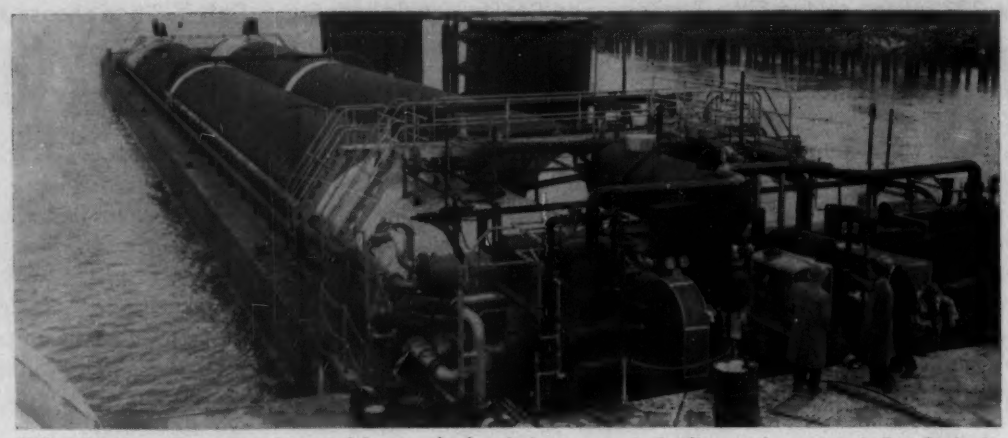


New huskier conventional trucks feature lighter, stronger frames of high-tensile steel . . . heavier gauge metal and stress-isolating independent mounting for radiator, fenders and cab.

QUALITY-BUILT... MAINTENANCE-ENGINEERED

FORD TRUCKS COST LESS

Sailing on the Mary Lee (and the Marjorie B)



Phillips Petroleum Co.'s new refrigerated barge unloads anhydrous ammonia fertilizer at the company's East St. Louis, Ill., terminal after completing its first trip from the company's Adams Terminal plant near Houston, Tex. This barge and another one like it are the first large-volume vessels suitable for carrying agricultural ammonia or LPG in a refrigerated condition.

First large volume refrigerated barges put in operation

D. W. CALVERT, C. A. CHRISTIE, E. E. REED*

PHILLIPS PETROLEUM COMPANY HAS RECENTLY TAKEN DELIVERY ON TWO BARGES, the MARY LEE and the MARJORIE B., to be used for the transportation of anhydrous ammonia and L.P. gas. These barges are designed to transport the cargo in a fully refrigerated condition. As far as is known, they are the first large volume refrigerated barges ever constructed.

The pair will begin operation as an integrated tow to transport anhydrous ammonia from Adams Terminal, on the Houston ship channel, to East St. Louis, Ill. They will be loaded with ammonia from four 1000-ton spheres operating at about 40 psig (plus 26 deg F.). The cargo will be cooled to atmospheric pressure (minus 28 deg F.) while in transit, by a direct refrigeration system. At East St. Louis, the barges will be unloaded into two 15,000-ton cone roof storage tanks which are designed to operate at atmospheric pressure (minus 28 deg F.).

The size of the tow can be increased in the future by adding a box type barge between the present barges. The barges have been certified by the U. S. Coast Guard and classified by the American Bureau of Shipping.

The barges are of open-hopper type construction. Each carries two horizontal cylindrical cargo tanks, giving it a capacity of approximately 1830 tons of ammonia. The lead barge measures 305 x 44 x 12½ ft, the trail barge 284 x 44 x 12½ ft.

The tanks are approximately 16 ft in diameter and 242 ft in overall length. They were constructed of a special carbon steel having ductility at the low operating temperature. The welds were required to pass the same low-temperature ductility tests as the parent metal. The tanks will operate at a maximum of 40 psig. It was necessary to design the tanks for 65 psig pressure to meet the U. S. Coast Guard requirement of a design pressure of 25 psi above the maximum operating pressure.

The direct refrigeration system on each barge operates by drawing vapors from the top of the cargo tanks, compressing and condensing them, and returning the product as a liquid to the cargo tanks. Sufficient refrigeration is installed to handle the heat gained through the

HOW ABOUT LPG?

Although Phillips has no specific LPG service in mind for the Mary Lee and the Marjorie B at this time, both could be dedicated to this use without modification. Product could be transferred to the vessels from almost any of the company's terminals, but at present there are no terminals equipped to receive the refrigerated product.

LPG would be loaded at 15 deg. F. and cooled to minus 28 deg.

In case of a complete failure of the refrigeration systems, it would take an estimated 9½ days for LPG to warm up sufficiently from the loading temperature to pop the relief valves. From the refrigated temperature, it would take 22½ days.

* Respectively assistant manager, transportation division, director of marine transportation, and technical consultant, Phillips Petroleum Co., Bartlesville, Okla.

everyone knows these two symbols of reliability!

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insulation, as well as to reduce the cargo temperature from a plus 26 deg F to a minus 28 deg F in six days. The cargo can then be unloaded directly into the receiving storage without further cooling.

The refrigeration equipment on each barge consists of two equal-size units, either of which has more than enough capacity to maintain the cargo below the tank operating pressure, thus meeting the U. S. Coast Guard requirement for stand-by refrigeration equipment. The refrigeration compressors are belt-driven from diesel engines, which also drive the pumps to supply cooling water to the condensing units. The compressors are controlled by cargo tank pressure.

Failure of both compressors would not be a cause for alarm. With no refrigeration, it would take more than three weeks for the cargo to warm up from the loading temperature sufficiently to pop the relief valves. After the cargo has been cooled to a minus 28 deg F (atmospheric pressure), it would take more than two months for them to pop.

During transit, the liquid level in the tanks will drop as the cargo temperature is reduced. Equal liquid level is maintained in each tank by a system that will return the condensed vapor from the refrigeration equipment to the tank with the lowest liquid level. But if the liquid levels are equal, it will return approximately equal volumes to each tank.

As the barges were designed for carrying L.P. gas as well as anhydrous ammonia, U. S. Coast Guard regulations required that all connections be on the tank top. Therefore, it wasn't possible to pipe directly from the tank bottoms to the unloading pumps. The tanks are unloaded by the refrigeration compressors, which move the ammonia from the cargo tanks to a small elevated separator. From this separator the cargo is pumped by diesel-driven vertical centrifugal pumps to shore storage.

The tanks are insulated by approximately 4 in. of a USCG-approved material. This is covered by glass fabric and a weatherproof mastic. A sheet metal cover gives mechanical protection near the refrigeration equipment and pumps and around the piping connections. Tank outlets are equipped with hydraulically operated emergency valves.

Ammonia is loaded on the barges through approximately 5700 ft of 6-in. and 8-in. loading line at a rate of approximately 1100 gpm. The energy input to the cargo by the loading pump on shore will cause a temperature rise of about 1½ deg F. The temperature rise due to heat gain in the loading line can be as much as 7 deg F. These increases, when added to the storage temperature of 26 deg F, bring the ammonia temperature to as high as 34½ deg F at the loading dock.

To prevent overpressuring the cargo tanks during loading, each barge has been equipped with a pressure reducing valve on the fill line to limit the pressure in the tanks to 40 psig. Considerable vapor flashes across these valves. The refrigeration equipment on the barges has sufficient capacity to condense this vapor, as well as the vapor boiled off due to heat gain through the insulation, and the vapor displaced by the incoming liquid.

The ammonia is unloaded at the receiving terminal through approximately 7800 ft of insulated line, most of which is 8-in. Heat gain during transfer is handled by the shore storage equipment.

It should not be concluded that fully refrigerated, or partially refrigerated, barge shipments of propane or anhydrous ammonia are always more economical than conventional pressure movements. The economics of transportation must also consider the type of storage at the loading and discharge points. If conventional pressure storage had already existed at our loading and discharge points, we might have found that it was more economical to use conventional pressure barge equipment. On the other hand, if it has been necessary to build new storage at both locations, it would probably have been more economical to build fully refrigerated storage and use fully refrigerated barge equipment.

Under the specific conditions that existed, these barges were determined to be more economical than conventional pressure barges. The cargo tanks were designed for a maximum pressure of 65 psig (40 psig maximum operating pressure plus 25 psi) rather than 250 psig for conventional pressure equipment. This reduction in pressure saved a substantial amount of steel. With conventional pressure barges, it would have been necessary to install large capacity refrigeration equipment on shore at the discharge point to reduce the temperature of the product during unloading down to the operating temperature of the shore storage (minus 28 deg F). Offsetting some of the savings in tank steel and shore refrigeration equipment was the cost of the refrigeration equipment on the barges and the barge tank insulation.

Everything considered, these specially designed barges will effect substantial savings in both investment and operating cost. ■

Dealer is sold on flaming

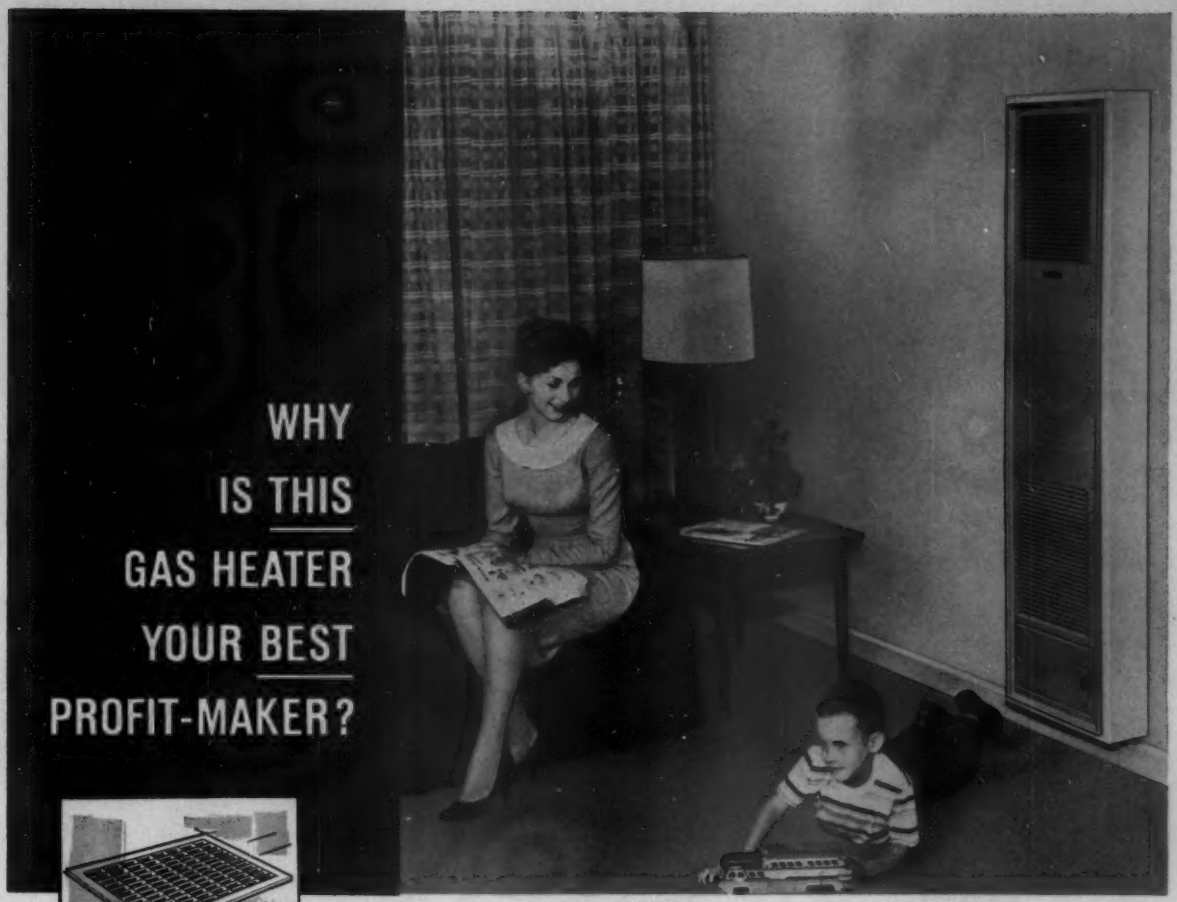
Flame cultivation is playing an important role in profit making for Mayes Gas of Crosby County, Texas.

In 1959 Truett Mayes, a Philgas distributor, visited High Plains Research and Development Foundation, Texas, and was convinced of the merit of the new farming method.

Then experimentation began. Mayes contacted farmers and supplied the fuel for testing the equipment. Flaming techniques for cotton, milo and potatoes were developed. In the first year, seven farmers used flame cultivation and bought 10,000 gals. of Philgas.

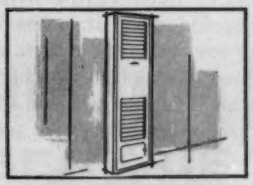
This year 70 out of 200 farm accounts are expected to flame their crops. Thirty or 40 flame cultivators should be sold, and a 25 per cent increase in Philgas volume is expected.

Mayes is personally calling on Crosby County farmers to help them plan for flaming. The farmers are also gathering at the bulk plant to discuss crops and farming methods. *Selling 66, May-June, 1961.*

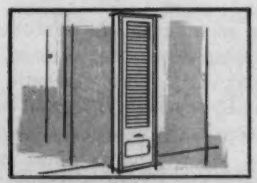


WHY IS THIS GAS HEATER YOUR BEST PROFIT-MAKER?

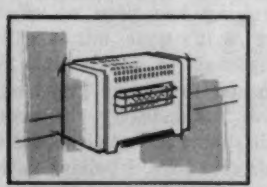
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- Superior air circulation. Cool air drawn in at top — warms floors, first — creates near-perfect room temperature.
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- Factory-installed sealed fan motor. No separate installation.
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Displays and Sales Kits! Suburban supplies you with displays, literature, sales kits and other tested aids to help you get more business.

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ADDRESS_____ CITY_____ STATE_____



Here are two ideas on summertime tax-saving

COUNSEL AT YOUR ELBOW

Are you giving your minor child a vacation job this year? Are you planning a family vacation trip this summer to or through states other than your own? If your answer to either or both of these questions is "yes," BPN's tax expert, E. H. Mitchell, has two tax-saving ideas that should be of interest.

DID YOU KNOW THAT YOUR CHILD'S WAGES COULD BE DEDUCTIBLE?

Until 1959, that portion of the wages you paid your minor child, which portion was used for his or her support, could not be deducted as a business expense. The reason for such disallowance was the fact that a parent is legally bound to support his children.

Today you may deduct such wages or salaries as business expenses regardless of the fact that your son or daughter may have used the money to purchase his or her clothing or other necessity, and even though you are legally entitled to the child's services. Like your other employees, he or she must report such wages in a tax return and is entitled to a $600 exemption.

Of course, there must be a *bona fide* relationship of employer and employee. The "business expense" tests apply. *(1)* The amount of wages paid must be reasonable, not excessive. The amount should be that ordinarily paid by like enterprises, for like services of persons with like skills. The services must be *(2)* ordinary and necessary to your business, and *(3)* actually rendered. *(4)* The wages must actually be paid.

By meeting the same requirements, you may deduct similar wages or salaries paid to other relatives, regardless of age, and whether or not they are dependent upon you for support.

Inter-state vacations. Have you planned a train, bus or motor vacation trip to or through one or more *non-home* states? If so, it could pay those of you who itemize your deductions to take daily notes of the dates, amounts and kinds of state, county and city sales and gasoline taxes paid.

All such taxes imposed *on the consumer* are deductible for Federal income tax purposes, even though they are collected by the retailer on goods and services which you purchase. If they are imposed *upon the retailer,* you (as purchaser) may still deduct them provided *(a)* they are passed on to you, *(b)* they are measured by the price of the article, and *(c)* they are separately stated. A tax is separately stated where it appears that it was added to the sales price as a separate item. An invoice or sales slip is not essential. Note that these rules apply alike to sales, gasoline and other motor fuel taxes imposed by state and local governments. *Federal* gasoline taxes are *not* deductible.

As an experienced tax return itemizer, you are already familiar with the sales and gasoline taxes of your home state. But you may not know the extent of such taxes in the other states you and your family visit. If such is the case, ascertain the nature and amount of such taxes as quickly as possible after entering each new state. The differences are often times surprising. In some there is a sales tax on restaurant meals. Some even tax the purchase of food in markets.

Lest you forget, a record of these many small outlays should be made daily and preserved. Either pencilled notes or gasoline credit cards will suffice. Such records will be sorely needed when it comes time to make out your 1961 return. And, as pointed out in last month's tax article, all should be retained for at least three years after your return is filed. ■

How L.P. gas dealers view their industry

(*continued from page* 35)

Vt., thought so. "Yes, it would help. There will be millions of people from all over the country there to see it." Added Mel Price, "I certainly think it would help. I think this, also, that they should advertise L.P. gas more. Natural gas has taken a terrific hold through television and advertising."

This same sentiment was echoed by a majority of the dealers interviewed. "I'm all for it," declared Harry Smith of Poughkeepsie, N. Y. Said Irvin Etscorn, "It would be wonderful. Yes, I think the money spent there would be as good as if it were spent at the grass roots level. A lot of people would see it." "It would be very good," affirmed Park Etters of Thermogas, Decorah, Iowa.

Some, however, expressed concern over whether funds might be diverted from local advertising and promotion to help pay the heavy cost of the display. Others who doubted its value in relationship to its cost thought the money would better be spent in television and other forms of national advertising.

In a number of the discussions on this question, the work of the National L.P. Gas Council was mentioned repeatedly. Almost without exception, it was praised by the dealers. About the harshest criticism of it came from a dealer who was not identified: "The Council advertising has been as effective as far as it's gone, but it still has a long way to go. It has to be broadened to a very great extent to give the industry the prestige that it should have to compete with the electric boys. I believe national programs are needed most." ■



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Mobil

ANCHOR PETROLEUM DIVISION
Mobil Oil Company
TULSA, OKLAHOMA

Ugite offers unity for LPG dealers

AT MAY MEETINGS IN HARRISBURG AND ALLENTOWN, PA., the United Gas Improvement Co., a natural gas utility with a liquefied petroleum gas subsidiary called Ugite, offered a unity plan to L. P. gas dealers operating within its area.

Edward H. Smoker, president of UGI and first vice president of the American Gas Association, made the unity offer to some 50 LPG dealers at the two meetings. "We're all in the gas business," he told the groups as he invited the dealers "to join with UGI in an overall unified promotion of the gas business."

The main point of interest to the dealers was that part of the plan which called for reimbursement for customers lost to *new* natural gas main extensions. By "new," the utility referred to those extensions made after Jan 1, 1961. The plan set up the following scale (bottom of page).

This payment schedule applies in full only to the first two years after the completion of the main extension. During the third and fourth years after completion of the extension, reimbursement is to be made on a 50 per cent basis. After the fourth year, there is to be no reimbursement.

In return for this, the utility asked that the dealers agree to promote natural gas appliances, in addition to L. P. gas appliances, by:

1. Identifying his place of business as a place to buy natural gas appliances.

2. Including in all appliance advertising such phrases as "for L. P. gas and natural gas" or "models also available for natural gas."

3. Having in stock the necessary orifices, etc., normally required to convert L. P. gas appliances offered for sale to natural gas.

In addition to the reimbursement feature of the plan, UGI also promised the dealers it would:

1. Offer L. P. gas dealers cooperative advertising in approved media and participating in special UGI promotions on the same basis as existing UGI cooperating appliances dealers.

2. Make available to them an extended sales and service training program.

3. Make available to L. P. gas dealers consulting assistance on special problems of installation or service at no charge.

4. Make available UGI home service representatives for demonstrations at nominal cost where there is no conflict with their UGI duties.

5. Make available inside signs for display floors and windows, "Natural gas and L. P. gas appliances," at prices based on quantity purchase.

Smoker said that his company had examined what it considered the three best gas unity programs (the Minneapolis plan, the Milwaukee plan, and the East Ohio Gas Co. plan) and devised this plan by extracting what it considered the best parts of the other three.

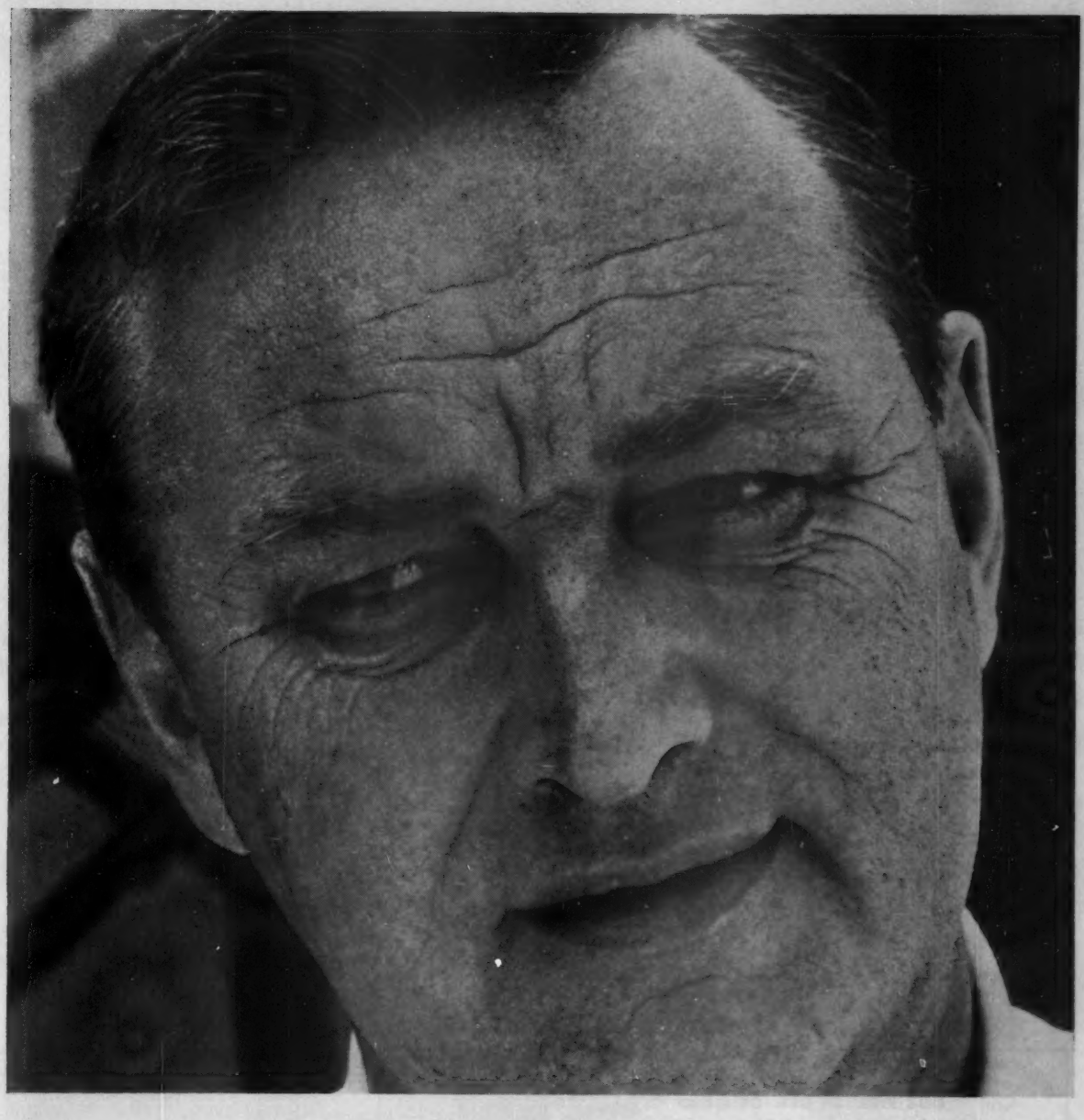
After noting that for the most part, the plan is flexible, Smoker then threw the meetings open to questions. The first questions to come up concerned the dealers' interest in present and future expansion of UGI's mains. As for the present, Smoker said his company will make its construction maps available to any dealer cooperating in the plan. As for the future, he said that even he did not know where his company was going to install mains next. But, as soon as such expansion is determined by the company, the dealers will be informed. In any event, the dealers will be notified in plenty of time to remove their equipment.

Another prominent question concerned the transfer of customers from the dealers to the utility when they (the customers) still had outstanding debts. Smoker said that UGI will make an effort to help the dealers collect unpaid bills. That question brought up another area for cooperation when it was suggested that UGI and the dealers get together to check out credit references.

Paul Haines, president of the Pennsylvania LPGA, seemed to be speaking for the vast majority of the dealers present when he said that he was "very happy" with the plan as it was proposed. The sales and service programs being offered by the utility were of special interest to him.

Each of the 130 L. P. gas dealers operating in UGI's "up-state" territories (Easton, Bethlehem, Allentown, Hazelton, Lancaster, Harrisburg, etc.—excluding its Philadelphia area) will be contacted individually at a later date by a representative of UGI's sales department. ■

	Piped for Natural Gas (to UGI specs.)	Piped for LP gas
Range, or automatic water heater	$ 25	$ 15
Range and automatic water heater	65	40
All-gas home with gas the only heating fuel	125	75



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"It's great to get phone calls that say, 'Please come put in a new water heater.' But it used to be murder when they'd say, 'Get out here and fix that water heater you sold me!'

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"And since DAY & NIGHT prices are competitive... well, there's no reason in the world for buying and selling second-best instead. Right?" Right! For information, write:

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BPN PEOPLE

WILLIAM R. MCLAUGHLIN was recently appointed manager of the newly created new products division of Rockwell Manufacturing Co.'s meter and valve division, Pittsburgh. He had been regional sales manager. JAMES SELLS replaces McLaughlin as regional sales manager in the southwestern region of the meter and valve division. WILLIAM HENRY was appointed district manager (same division) of the Houston area, and PAT LUCKETT replaces Henry as Houston district manager of the municipal and utility division.





W. R. McLaughlin — James Sells
Rockwell Manufacturing

RAY B. HAYTER — from assistant branch manager of General Controls Co.'s Dallas office to manager of the Wichita, Kan. branch office.

DAVID R. WEBSTER, JR., formerly with Benson-Lehner Corp., Santa Monica, Calif., recently joined Reznor Manufacturing Co., Mercer, Pa., as assistant to the president.

LEN CONRAD was recently elected president of Heil-Quaker Corp., Nashville, Tenn. Conrad has been executive vice-president and general manager.

JAMES J. LONEY — from district manager of Norge Division of Borg-Warner Corp., Chicago, to western field sales manager.

ANTHONY C. LASCALA—from manager of Tappan Co.'s Burlingame, Calif., branch office to district manager in northern California and part of Nevada.

VERN W. CRIST — from assistant controller of the Permaglas division of A. O. Smith Corp., Kankakee, Ill., to controller of the newly-formed consumer products division.

I. H. RICKETTS recently joined Calnev Pipe Line Co., Los Angeles, as general superintendent. He had formerly served with Williams Brothers Co. of Tulsa, Okla., as project engineer.

ARTHUR KREAGER and JAMES RAINEY were recently appointed sales managers for Owatonna Tool Co., Owatonna, Minn. Kreager will cover the West Virginia and western Pennsylvania area, while Rainey will cover the Illinois (except Chicago) area.

W. L. KILLEN, vice president of manufacturing and engineering of Pressed Steel Tank Co., Milwaukee, was recently elected to the board of directors.





W. L. Killen
Pressed Steel

Lowell Stanley
Petrolane

LOWELL STANLEY was recently elected to chairman of the board of directors of Petrolane Gas Service, Inc., Long Beach, Calif. He replaces P. E. FOOTE who has been made honorary chairman.

R. E. ALBERT was recently appointed chief engineer of special development group of The Payne Co., La Puente, Calif. RALPH GIESER will succeed Albert as chief of advance engineering.

GORDON M. HENDERSON and PAUL SELBY have been appointed salesmen for The Ridge Tool Co., Elyria, Ohio. Henderson will cover the state of Florida, and Selby will cover the Quebec and Maritime Provinces.

FRANK F. ROSS and I. M. DEARING, JR., have recently been appointed sales engineers of Grove Valve and Regulator Co., subsidiary of Walworth Co., Oakland, Calif. Ross had previously served with National Supply Co., and Dearing with Oil Center Tool Co., both of Houston.



J. V. Guido
Motorola

JOSEPH V. GUIDO was recently named regional sales manager of

Bus fleets' use of LPG breaks record

CITY BUS FLEETS used approximately 33,300,000 gallons of L. P. gas for their operations last year. This was a record for the nine years that propane and butane have been important fuels in mass transportation.

A survey of 17 metropolitan lines shows that their 2425 buses used approximately 500,000 gallons more of L. P. gas last year than in 1959.

The survey was made by the Liquefied Petroleum Gas Association's market research department and is one of several L. P. gas equipment and use tallies it develops.

Busowners said they saved an average of 6.98¢ a gallon by using L. P. gas, comparing it with gasoline. Another saving reported by the fleets was their average motor oil change interval—13,923 miles between refills.

L. P. gas fueled buses carried approximately 324 million passengers in 1960 and traveled 81,172,187 miles, most of it stop-and-go driving.

The fleets were led by the 1500 units of the Chicago Transit Authority. L. P. gas buses are on the road in 10 other states and one Canadian province, according to the LPGA report. ■

New SPEEDLOADER 2400
New Improved HITCH-HIKER Trailer

Two reasons why United's services can boost your operating profit.

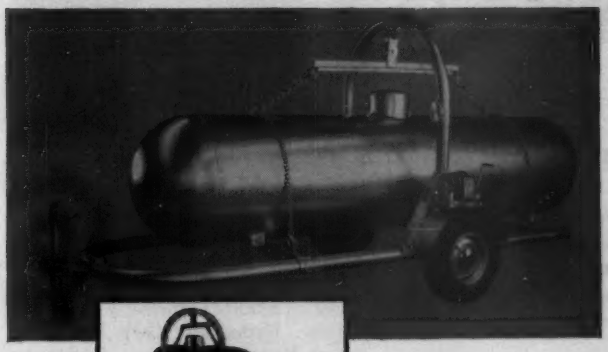
United's new SPEEDLOADER 2400 LPG Truck **1**

Its high payload-to-weight ratio, fast pumping rate and simplified piping means time saved and extra profit for you



We make it with A202B high-tensile steel to conserve weight (gross weight loaded, less than 24,000 lbs.) New piping has minimum number of bends for easy flow. A 2½" pump delivers fuel at 50 to 60 gal. per minute. Rear compartment, weatherproof, affords easy access to all working parts. Many other features you'll appreciate.

Meet HITCH-HIKER, the Super Trailer





2 You'll save time, money and effort every day with this rugged pickup trailer. Frame is heavy-duty 4" pipe —durable yet light. Vertical frame member can be unbolted for rail shipment.

Hitch-Hiker will handle any size tank up to 51" I.D. x 18' with its own muscles. You simply back up the trailer to surround the tank, hike it up with the built-in, heavy-duty winch, put carry-bars in place on frame, lower tank onto carry-bars and secure travel chain. Takes only four minutes!

You just can't build one yourself for anywhere near our price.

Write, wire or phone NOW for complete specs and prices on these items.

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UNITED PETROLEUM GAS COMPANY

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Motorola, Inc., Chicago, in the Pacific northwest. Succeeding him as an account executive in Washington and Oregon is D. EDWARD WILLIAMS. Moving into Williams' former position as Seattle zone sales manager is ROBERT H. MAKI. Guido's headquarters are in Portland, Ore., while Williams and Maki are located in Bellevue, Washington.

JACK W. HUDSON—from vice president in charge of engineering and field operations of Britalta Petroleums Limited, Calgary, Alberta, to vice president and general manager. NATE GOODMAN, formerly with J. H. Wilson & Associates, recently joined the firm as production superintendent.

WILLIAM SWAN — from assistant sales manager of Parker Seal Co., Culver City, Calif., to western sales manager.

ALBERT B. ALKEK and O. GUINN SMITH were recently elected to the board of directors of Mid-America Pipeline Co.

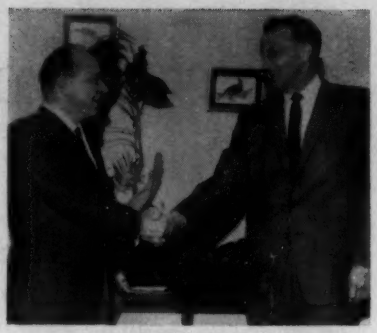


Rochester Gauges has it!

World famous Rochester Gauges are performing the toughest jobs with trouble-free, rugged ease — day after day! Rochester's complete line of easy-to-read Criterions, the larger Magnetrons, and compact Flow Indicators truly indicate that "Rochester Gauges the Industry."

Demand Rochester Criterion gauges on your next tank order or order direct from factory.

ROCHESTER GAUGES, INC.
OF TEXAS
2425 CAROLINE • DALLAS, TEXAS
SALES OFFICES: DALLAS; ATLANTA; DENVER; ROCHESTER; LONDON, ONTARIO



H. P. SCHOERNER has been appointed manufacturing manager of Day & Night Manufacturing Co.'s, La Puente, Calif., plant. Congratulating him is RAY A. TRITTEN (right)., vice-president of the firm.

H. W. GUSTAFSON, formerly Canadian marketing superintendent in the international department at Calgary, Alberta, was recently named assistant manager of LPG sales of Phillips Petroleum Co., Bartlesville, Okla.

SAMUEL B. BARLEY recently succeeded B. FRANK ALBANESE as LPG sales manager at headquarters of the Esso Standard division of Humble Oil & Refining Co., New York City. Albanese has retired from the firm.



B. F. Albanese S. B. Barley

Humble Oil

VINCENT J. SALEMME was recently named to the new position of chief engineer of Shand and Jurs Co., Berkeley, Calif. He formerly served with Western Electric Co.

LEE C. STANLEY, formerly with California Hydronics Corp., recently joined Raypak Co., Inc., El Monte, Calif., as factory sales engineer.

FRED DERANGO has been named vice-president of Waste King Corp., Los Angeles. He will be in charge of commercial disposer and cooking equipment sales. ALLAN A. BARNHART, JAMES J. MARCUS, WILLIAM M. O'CONNELL, and JOHN G. SCHELLENBERG have been appointed sales executives of free-standing ranges. They will cover the respective areas: national,



K. L. Laswell, Secretary-Auditor



Burroughs Multi-Print Accounting Machine reduces month-end workload 66⅔%

The scene: United Propane Company's Macon Branch, Decatur, Ill., supplying propane to 2,418 retail and wholesale customers yearly. **The job:** Accounts receivable and age analysis with automatic Degree Day records. **The equipment:** Burroughs F 5200 Multi-Print Accounting Machine. **The results,** reported by K. L. Laswell, secretary-auditor: "With our Burroughs equipment, we have been able to reduce our month-end workload 66⅔%. This stems partly from simultaneous and automatic multiple printing of original records, the use of a metered bill and the elimination of human errors in computing individual customer charges. As a result, we have more accurate records, complete age analysis and more efficient routing of delivery trucks."

Burroughs—TM



Join the many successful LP dealers provided new accounting efficiency by Burroughs Corporation. Whatever your problem, our representatives offer you the experience and capabilities in systems analysis to solve it. And we have the equipment you'll need—everything from adding machines to electronic computer systems. Call our nearby branch now. Or write Burroughs Corporation, Detroit 32, Michigan.

Burroughs Corporation

"NEW DIMENSIONS / in electronics and data processing systems"

west and southwest region, eastern region, and central region.

DUDLEY E. HEATH, EDWARD R. GILMORE, and WILLIAM G. WEPFER have been elected vice presidents of Arkla Air Conditioning Corp. of Little Rock, Ark. Heath and Wepfer will serve in the Evansville, Ind., plant and retain their duties as staff coordinator and sales manager, respectively. Gilmore will retain his same duties of general manager at the Russellville, Ark., plant.

FRANK H. POST has been named marketing vice-president at headquarters of Robertshaw-Fulton Controls Co., Richmond, Va. ARNOLD C. HANSEN will succeed Post as vice-president and general manager of the thermostat division in western Pennsylvania. Hansen had served as assistant to the general manager of the controls division in Long Beach, Calif.

ANTHONY AUTORINO JR. was recently appointed staff assistant for the Conservative Gas Division of National Propane Corp., Garden City, New York.

IS THIS YOUR PROBLEM?

"How can a dealer be SURE about new employees?"

"There is no crystal ball for 'personnel-predictions', but more thoughtful methods of selection can reduce employee turnover".

(FROM THE UTN SHIRTSLEEVES SERIES*—VOL. 2)

The cost to the average LP-gas dealer of employee selection, training and turnover is an increasing problem. Each businessman is faced by the individual problems that are peculiar to his own company, the day-to-day decisions which affect the success or failure of his own employees, and therefore his profit or loss.

Few dealers, of course, have the need for a regular "personnel department," but there is no reason why EVERY dealer cannot and should not maintain fairly fixed and practical personnel *policies:* standards of screening, hiring and developing. Perhaps these suggestions will start you out on the road to greater profits through less employee turnover.

First, take a look at your*self:* your company, your present staff, their potential, the expanding possibilities of your business, its limitations, the qualifications and responsibilities required in each job in your company—those that are already filled and those that need filling. Make this an *objective* look; evaluate yourself and your company fairly and squarely, from the standpoint of what it IS and CAN be. If you presently do not have a job vacancy, anticipate the next opening that you think will most logically occur (a good personnel policy, anyway!), and answer in your own mind, or on paper, these questions:

What specific mechanical or other abilities are needed? How much past experience is necessary? Is problem-solving involved? Is decision-making involved? Is initiative involved? Detailed, routine work? Is age a factor? Sex? Marital and family status? Social or educational background? What is the job worth to *you,* today, in your *present* economy? What realistic chances for advancement are there in the job, in authority and/or salary?

The frank and honest answers to these questions on each job function in your company will reveal a workable, practical *base* from which to hire new employees with greater assurance of their ultimate profit to you as a businessman.

*(Limitations of space in this message do not permit a full discussion of this subject, but to aid its dealers and friends, Union Texas Natural has prepared a special booklet—"Selecting and Predicting Personnel for the LP-Gas Dealer"—and a copy is yours free of charge or obligation from your UTN sales representative, or by writing today.)

UTN

Texgat

UNION TEXAS NATURAL GAS CORPORATION

ENTERPRISE BUILDING TULSA OKLAHOMA

BPN associations

LPG's combat to electricity has aided petroleum industry

"LPG sales gains, averaging 11 per cent for the last 10 years, are coming primarily from new uses and new markets which could not have been supplied by other petroleum products," said Don Barton, Skelgas Division of Skelly Oil, Kansas City, Mo., at a recent meeting of the American Petroleum Institute's division of marketing.

He said about 50 per cent of domestic LPG volume is for uses such as cooking and water heating. The petroleum industry would have lost these markets to electricity if LPG had not been available to furnish aggressive competition to electricity.

For the past ten years the LPG industry has spent $450 million in promotions and publicity through the National L. P. Gas Council, Barton stated.

Barton concluded by urging the petroleum marketers to "realize the full potential of the great LPG market."

Olson chairman of industry's 50th anniversary committee

The LPG industry will be celebrating its golden anniversary next year, and Andrew R. Olson, president of Protane Corp. of Cleveland, will serve as chairman of the committee. The National L. P. Gas Council will direct the nationwide activities. Harold L. Costello, president of Imperial Gas Co. of Los Angeles, will be the



Andrew Olson

THE TEMCO TRIO®

FOR THE GREAT NEW MARKET IN SPACE HEATING

A tremendous change is taking place in the space heater business. And, TEMCO is the only manufacturer in the gas space heating industry that has already developed a complete line specifically designed for this great new space heater market.

The old market for free-standing gas space heaters is declining as express ways and redevelopments cut down row after row of old-style apartments and houses.

The new market, with much greater potential, is the vast home modernization market. Garages, basements, attics and breezeways are being converted into dens, playrooms and living quarters. New rooms are being added, vacation cabins are being improved.

All home improvement that adds or alters living space confronts the home owner with a heating problem. Each heating problem is a prospective sale for the TEMCO dealer because at least one of the units of the Temco Trio is just right for any planned alteration or addition.

Protected by U.S. Patent #2,964,034—granted 1960, Canadian Patent—#615,008—granted 1961.

GET YOUR SHARE OF THE 4.6 BILLION DOLLAR REMODELING MARKET!*

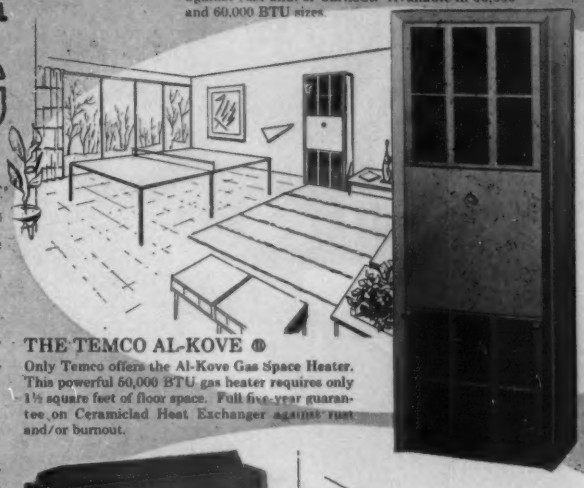
*Source: Department of Commerce, Bureau of Census





THE TEMCO WALL FURNACE

Controlled radiation is an exclusive Temco feature on the Temco Gas Recessed Wall Furnace. Full five-year guarantee on Ceramiclad Heat Exchanger against rust and/or burnout. Available in 35,000 and 60,000 BTU sizes.



THE TEMCO AL-KOVE ®

Only Temco offers the Al-Kove Gas Space Heater. This powerful 50,000 BTU gas heater requires only 1½ square feet of floor space. Full five-year guarantee on Ceramiclad Heat Exchanger against rust and/or burnout.





THE TEMCO PRE-VENT ®

This thru-the-wall direct vented hermetically sealed unit is acknowledged America's most wanted gas heater of its type. Available in 10,000, 20,000, and 30,000 BTU sizes. Full five-year guarantee on Ceramiclad Heat Exchanger against rust and/or burnout.

MAIL TODAY for your answer to today's new heating market!

TEMCO,® inc.

NASHVILLE 9, TENNESSEE

"Gas Heating Specialists for the Nation"



TEMCO, Inc., Dept. BP, Nashville 9, Tenn.

Please send me the name of my nearest TEMCO distributor plus complete information about the TEMCO Trio.

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historical consultant. Other personnel include—

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Public relations committee: Philip Harper, Harper-Wyman, Chicago; Med Serif, Cities Service, New York City; William Daub, Sun Oil, Philadelphia; Douglas Kramer, American Meter, Erie, Pa.

Dealer sales aid committee: A. E. Moore, Dri-Gas Co., Hinsdale, Ill.; Charles Francisco, Fuelane Corp., Liberty, New York; Gene Dobbins, Pyrofax, New York

Gas industry growth seen through marketing research

"As the 1950's are known for the advances made in physical sciences, the '60's will be known for advances in scientific marketing," said Robert Quayle Jr., president of the Norge Division of Borg-Warner Corp. He recently spoke before the financial committee of the AGA meeting in Phoenix.

Referring to future markets for the gas industry, he noted that "automated pipelines will make every family in every corner of the country our logical customer.

"The manufacturers of gas appliances have a tremendous opportunity to link their technical and market research with the technical resources of the gas utilities."

Missouri offers film on gas vs. electrical heat

The Missouri LPGA, at its annual spring board meeting, decided to sponsor two 15-minute sound and color films on LPG.

The first one will explain what LPG is, and the history of the development of the industry. It will be placed in the film library of the State Board of Education and distributed to schools upon request.

The second one which will be the property of the association, will be used as a sales tool to compare gas heat with electric heat. It will be made available to dealers by sale. This film will be a high class film, being produced by the Carlson Co., one of the largest industrial film corporations of America.



Peter A. Anderson (center), former president of LPGA, was given the annual Seley Fellowship Award by the Ancient Gassers during a recent meeting. Anderson was honored for his service to the industry and community. R. Adam Johnstone, Bastian-Blessing Co., (left) made the presentation of a watch which was donated by Louis E. Seley (right) and his brother Simon.



ONLY THE VISIBLE GAUGE OFFERS SO MUCH TO BOTH CONSUMER AND DISTRIBUTOR

There's quite a story behind every Visible gauge. And every step of the way, from design through eventual installation, it's the *plus factors* of Visible construction that add profit to your operation.

Visible's patented one-piece gear and counterweight assembly assures positive installation by the fabricator —the shrouded gear can't be damaged in installation. And in shipment—the one piece assembly can't shake loose *ever!* The Visible gauge works positively in the field or on a motor fuel tank—it can't be damaged from rough usage. The counterweight and the spring steel float rod are so well balanced that just *one-half ounce of horsepower* will actuate the pointer!

And up the Visible plus factors, and you'll agree—here's the one gauge that will last for years . . . the one gauge that you can recommend to your customers because you know it's trouble-free . . . the one and only Visible gauge!

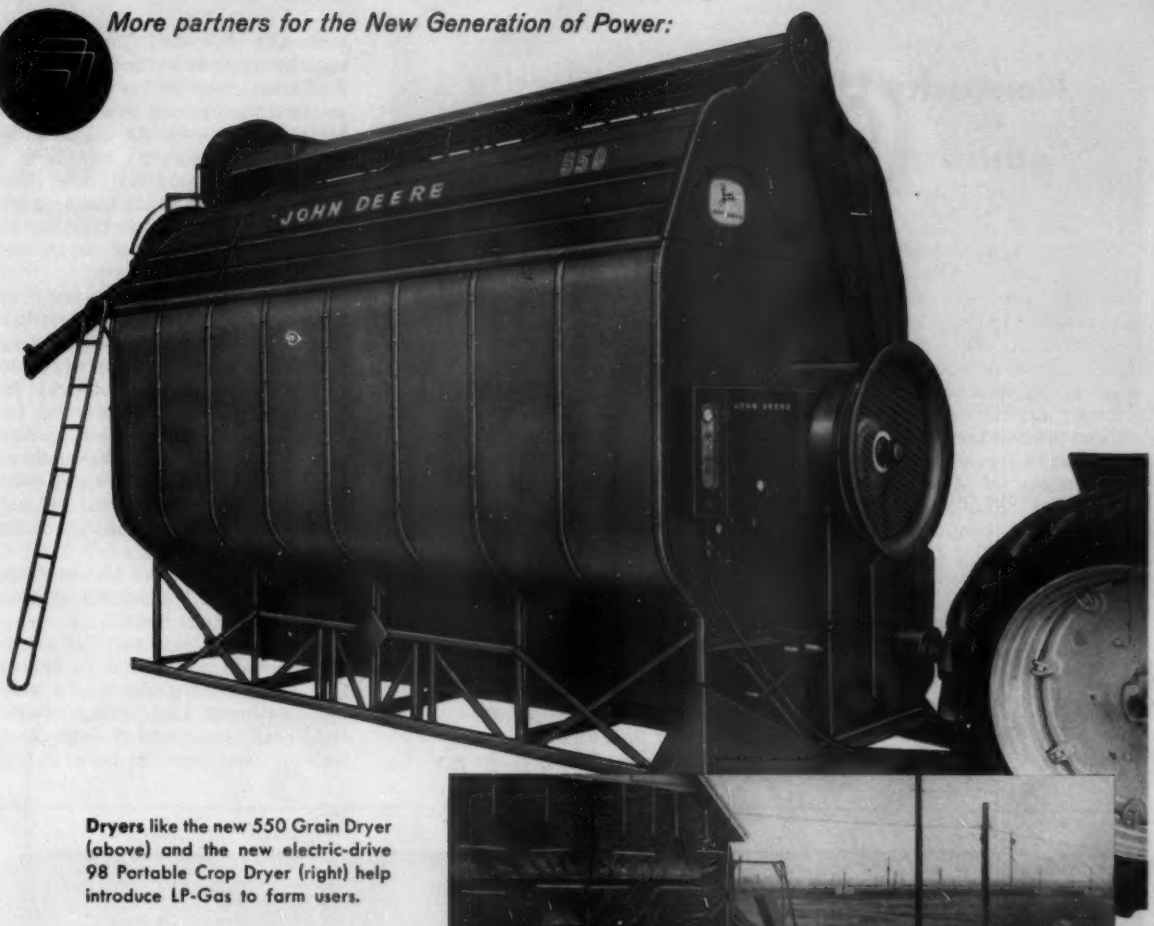
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More partners for the New Generation of Power:



Dryers like the new 550 Grain Dryer (above) and the new electric-drive 98 Portable Crop Dryer (right) help introduce LP-Gas to farm users.



Other John Deere farm equipment with LP-Gas fuel option includes tractors, combines, cotton pickers, and irrigation engines.

New John Deere Crop Dryers promote LPG use

No need to tell you—the farm market for LP-Gas includes important sources of off-season volume. When you encourage crop drying, you take a big step toward balancing your load.

You can recommend new John Deere Crop Dryers with confidence. They're better than ever in reliability, flexibility, convenience and speed. These big-capacity dryers make early harvest practical every year, wet or dry.

New features, including a single-fire burner with modulating temperature control, instant burner shutoff, and centrifugal fan switch, set a new standard of reliability and safety.

The 550-bushel 550 Grain Dryer has controlled blending for fast, even drying; quick unloading; removable transport wheels. Portable Crop Dryers are available with PTO or electric drive. Drop us a line for complete information.

JOHN DEERE • 3300 RIVER DRIVE, MOLINE, ILLINOIS

JOHN DEERE design, dependability, and dealers **MAKE THE DIFFERENCE**

JOHN DEERE

Kentucky LPGA and university "educate" 125 at LPG field day

PLASTIC GREENHOUSE HEATING, TOBACCO CURING, AND FLAME CULTIVATION were the subjects. Approximately 125 agricultural leaders, farmers, and LPG men were the students. A leading LPG agricultural equipment manufacturer, a county agricultural agent, a farmer, and several members of the Department of Agricultural Engineering, College of Agriculture, University of Kentucky, were the teachers. Put them all together and you've got the first Liquefied Petroleum Gas Field Day on Agricultural Applications of LPG, staged in late April on the university's experimental farm.

While the field day was the first of its kind, it was only the latest in a long series of cooperative activities in which the Kentucky LPGA and the state university took part in another project.

At an association-sponsored banquet preceding the field day, association president William Johnson, himself a graduate in agriculture, revealed that gifts of some $15,000 to $20,000 worth of LPG equipment had been made available to the Agricultural Engineering Department through the efforts of the association. Included in this were an LPG laboratory with tanks, pumps, hoses, regulators, and meters; three sets of carburetion equipment, conversion of a welding machine, technical literature, schools, courses, consultation, etc.

The agricultural engineering department at the university is comparatively new; but, according to the association, it has shown "remarkable insight into the engineering problems of agriculture and the means to their solution." In opening the day's activities, Dr. Blaine F. Parker, head of the department, equated the amount of energy used by a nation with its standard of living. He continued: "As LPG is one of the comparatively new fuels, (it is significant) that business and agriculture should get together today to see how this fuel can be used to better advantage."

In making his introductory remarks, President Johnson outlined the present market for LPG in agriculture by citing examples of current installations in Kentucky for flame cultivation, crop drying, pig parlor heating, calf parlor heating, chicken brooding, molasses making, milkhouse heating and water heating, tractor carburetion, tobacco curing, and, of course, the farm house, itself.

The remainder of the morning was devoted to the subject of heating plastic green houses.

Dr. George Marlowe of the university staff called LPG "a natural fuel for plastic green house use," but cautioned that such installations call for careful control of moisture and heat. He believes that

Nor-Tex "SAFETY LINERS"

You'll haul MORE GAS and LESS STEEL than ever before with a skillfully engineered, smart looking, streamlined Nor-Tex transport of T-1 and A-202B steel built to latest code ICC-MC-330. All fittings are recessed for safety. Exclusive Nor-Tex swirlproof SUMP permits easy unloading of EVERY DROP OF GAS. More safety and profit "extras" for you because they are built by men with years of actual bulk plant experience. Get the facts! Write, wire or phone collect today.

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EARN MORE MONEY



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P. O. BOX 1219 NORTH TEXAS TANK CO. DENTON, TEXAS

plastic greenhouses can help with the economic reconstruction of Kentucky "if they are encouraged with caution."

Graduate student Hubert Casada explained a research project in which LPG-burning equipment is being tried to deal with the moisture problem in greenhouses. Among the devices in the experiment is one that picks up the moisture of plant evaporation and expels it with the by products of combustion and one that maintains constant conditions by dampers regulating the intake of outside air.

A tour of the university's plastic green houses ended the morning session.

The first part of the afternoon was devoted to tobacco mechanization and farming. Progress on the National Tobacco Research Center was described by Dr. William Seay, acting dean of the College of Agriculture. Dr. Joe Bunn of the staff emphasized that mechanization can solve the four problems of the tobacco grower: a decreasing labor force, buyers' desire for increased quality, insufficient profits, and lack of barn space.



Part of the group attending the first LPG field day at the College of Agriculture, University of Kentucky. It was sponsored by the Kentucky LPGA.

Kermit Mills, also on the school's staff, described propane as "the leading fuel used in curing tobacco." He stressed that the dealer can help the tobacco farmer to use this heat most effectively.

"This heat should be used to lower the humidity at night. If humidity has been too high for 48 hours—and this might be in August—the farmer should be ready to apply heat; and he needs the LPG dealer to help him prepare before he needs it."

The second half of the afternoon was devoted to flame cultivation. Speakers were J. W. Gotcher of Gotcher Engineering and Manufacturing Co., Prof. Ed. M. Smith of the university staff, county agent J. E. McClure, and "Farmer Rice of Daviess County." All reported on recent success in flaming corn and other crops—and gave flaming tips. ■

BOBTAILS

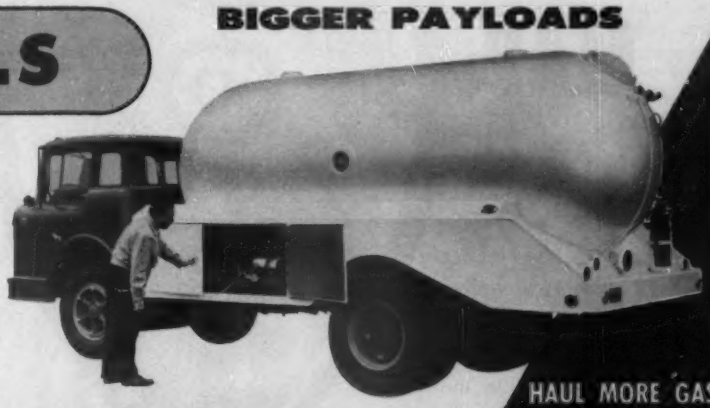
BIGGER PAYLOADS

Choose From 4 Models-8 Styles

★ STANDARD ★ PAYLOAD

★ CUSTOM ★ DE LUXE

Sleek, LIGHT-WEIGHT, streamlined twin or single barrel BOBTAILS featuring Nor-Tex pioneered ALUMINUM SKIRTING and CABINETS. Practical engineered 3000 WG units and over, on cab-over or cab-forward trucks, are still within the 18,000-lb. axle limit. High-flow plumbing delivers "extra" gallons faster. For efficiency, durability, payload, fast loading and unloading, balance and appearance, Nor-Tex BOBTAILS just can't be beat!



BALANCE YOUR LOAD THE NOR-TEX WAY

... Finance the Balance

HAUL MORE GAS and LESS STEEL Than Ever Before

Dependable ROUTE-RATED Units

As costs increase and profit declines, guess-calculations of delivery unit size becomes more and more hazardous. It's no wonder Nor-Tex Route-Rating service has grown so popular. Units are built to fit your need, based on length of route, terrain covered, convenience of cabinet location, and trips required on peak loads. "Route-Rating" helps you deliver extra gallons, work fewer hours, drive less miles and eliminates costly overtime expense.



Aluminum Skirting and Cabinets

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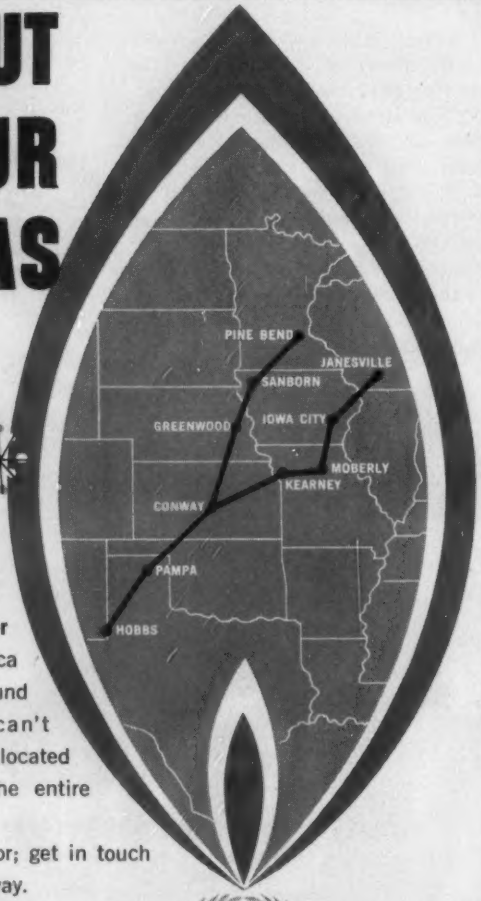
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The Ancient Gassers (far left) bestowed the first Safety Award to William D. Cook (right), vice president and controller of Suburban Propane Gas. George R. Postlewait of Bastian-Blessing Co., Chicago, made the presentation at a recent LPGA meeting in Chicago. New officers for the Ancient Gassers were also elected at the meeting (top right). They are (from left): Harris A. Goodwin, Bastian-Blessing Co., Chicago, secretary; K. H. Koach, Green's Fuel, Sarasota, Fla., general chairman; W. A. Baden, Anchor division of Mobil Oil Co., Tulsa, Okla., vice chairman; and R. F. Maycen, Dri-Gas Co., Hinsdale, Ill., treasurer.

PUT YOUR LP GAS ON THE MAP



Avoid uncertain deliveries and artificial shortages. Arrange to have **your** LPG shipped via Mid-America Pipeline . . . the underground highway that weather can't block. Seven conveniently-located delivery terminals serve the entire upper midwest.

Do your customers a favor; get in touch with your supplier right away.

MAP CO.

MID-AMERICA
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ASSOCIATION NOTES

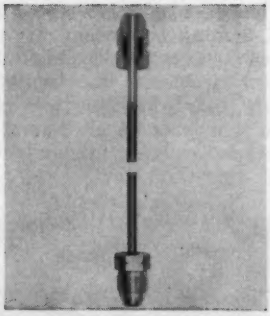
Merle Imus, vice president in charge of bulk commodities for Consolidated Freightways, Menlo Park, Calif., was recently named president of National Tank Truck Carriers, Inc., at its 13th annual convention in Cincinnati. Vice presidents are: William F. Crossett, Warren, Pa.; Sam Carpenter, Cushing, Okla.; C. Wilson Burnette, Newcastle, Wyo. Willard Lemmon was re-elected treasurer, and Austin Sutherland, secretary.

Rixford A. Beals has recently been named manager of the Commercial & Industrial Division of the National Better Heating-Cooling Council. He was formerly editorial director of the American Institute of Mining, Metallurgical and Petroleum Engineers.

The Del-Mar-Va Gas Association elected officers recently at its semi-annual meeting in Dover, Delaware. They are: Jack Peacock—president, Howard Wilson—vice-president, D. M. Stavely—secretary-treasurer.

For further information on any items in this section use the convenient Univac Readers' Service postcards on pages 73, 74.

New Products and Free Literature



Tin-lined pigtail prevents copper sulfide formation

Circle 1 on Readers' Service Card

Tin-lined LPG pigtails are now available in straight lengths 18-in long, having either POL by POL connections or POL by ¼-in inverted flare connections. The tin lining prevents the formation of sulfides of copper, which has been a long-time problem resulting in high regulator lock-up (GEC-260). Bastian-Blessing Co.



Gas disposer contains full firebrick lining

Circle 3 on Readers' Service Card

A new "Warm Morning" gas disposer has been designed for smokeless-odorless incineration of food wastes. This model has a full firebrick lining that is guaranteed never to burn out. It can be used with natural, manufactured, mixed or L. P. gases, and has a rated input of 26,500 Btu per hour (GEC 440). Locke Stove Co.



Single mantle LPG lantern has self cleaning orifice

Circle 5 on Readers' Service Card

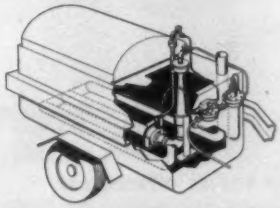
With a light output equivalent to a 100 watt incandescent bulb, this single mantle LPG lantern has a new self-cleaning orifice which eliminates clogging. This lantern (GEC 470) lights 7 hours on one can of "Insta-Lite" fuel. Wind, rain, or rough movement does not effect its steady light or brillance. Metalcraft Manufacturing Corp.



Nozzles provide capacities of 4 and 8 gpm at 40 psi

Circle 2 on Readers' Service Card

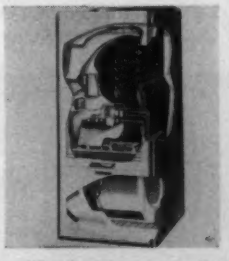
This nozzle, made from one piece of material, is claimed to give better atomization at lower pressures than conventional nozzles of similar capacity. The TF10 and TF14 series provide capacities of 4 and 8 gpm respectively at 40 psi with wide or narrow angle and full or hollow cone pattern (GEC 710). Bete Fog Nozzle, Inc.



Controls give precise fuel regulation on tar kettles

Circle 4 on Readers' Service Card

These controls, for use in an LPG tar kettle, achieve precise regulation without the need for batteries. The pilot control shuts off the entire gas supply in seconds for protection from damage from any pilot failure. The valve permits the flow of gas to the burner only when the pilot is operating (GEC 190). Partlow Corp.

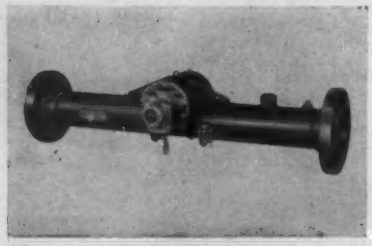


Low-profile furnace made for closet installation

Circle 6 on Readers' Service Card

A new series up-flow gas furnace has been reduced in height to 54¼ in, making it possible to fit in low-ceiling closets. A cooling evaporator allows ductwork to be taken off from the plenum as low as 61 in from the closet floor. This permits ample servicing access through the conventional 80-in door (GEC 420). Lennox Industries.

For further information on these products use Readers' Service Cards on pages 73, 74.



Vortex-velocity flowmeter measures at high pressure

Circle 7 on Readers' Service Card

Providing both an economical and accurate means of measuring gas or liquid flow at high pressure, this new vortex - velocity flowmeter is now available. It is fitted with an adjustable internal bypass which serves as a range adjuster and also as a calibrator (GEC 560). Rotron Controls.



Cutting torch designed for natural or L. P. gas

Circle 8 on Readers' Service Card

This cutting torch is specifically designed for natural or L.P. gas. It operates at any pressure from 3 oz. up. A range of tips are available to provide extra fast pre-heat for scrap yard and demolition work (GEC 780). Harris Calorific Co.



Compact oven offers luxury at economical prices

Circle 9 on Readers' Service Card

This completely re-designed compact "Suburbanette 16" offers luxury styling and cooking features at economical prices. The gas oven broiler is available in five colors and brushed chrome (GEC 240). Samuel Stamping & Enameling.



Penetrant quickly loosens all types of frozen fittings

Circle 10 on Readers' Service Card

"Rust Buster" is an all new-penetrant in a plastic squeeze bottle. The added feature of this is the extending spout to place rust-freeing liquid right on the spot. This penetrant quickly loosens rusted bolts, screws, shafts, piping and all types of frozen connections (GEC 500). Armite Labs.

New manometer simplifies low-pressure measuring

Circle 11 on Readers' Service Card

A new manometer, suitable for water, glycerine, mercury or oil is now being marketed. It is said that the new manometer has been specially designed and built to take the roughest day-to-day handling while delivering consistently accurate readings (GEC 540). Gas Consumers Service.



Zone valves offered for two installations

Circle 12 on Readers' Service Card

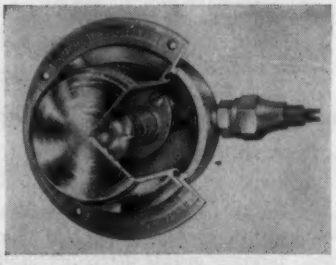
A newly designed series of zone valves for modern hydronic heating and heat-cooling systems has recently been announced. The two new styles are offered for multiple-pipe systems and single-pipe installations. The valves are operated by a specially designed shaded pole motor that delivers many times the power available from the synchronous motors commonly used in zone valves. (GEC 820). White-Rodgers.



Flamer designed to handle limited weed control

Circle 13 on Readers' Service Card

A new weed flamer, "L-30" Ramjet, has been added to the line of LPG flaming equipment. It is designed to economically handle weed control problems too limited to justify large multi-burner equipment It mounts on all 3-point and fast-type tractor hitches (GEC 001). Agri-Quip.



Safety lamp serves as combination junction box

Circle 14 on Readers' Service Card

Model B-56JL stop, tail and license lamp is housed in die-cast aluminum thick enough to permit drilling and tapping for conduit fittings. This enables the lamp to serve as a junction box as well (GEC 790). Betts Machine Co.



Instrument for testing gas burner controls

Circle 15 on Readers' Service Card

A new multi-purpose instrument has been developed for on the job testing of gas burner controls. It checks drop-out values of thermoelectric power units, MV output of thermocouples and pilot generators (GEC 540). Baso, Inc.

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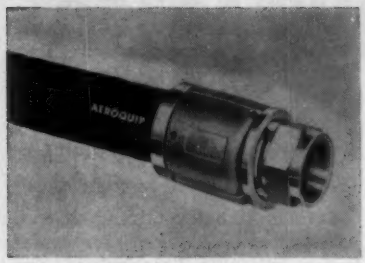
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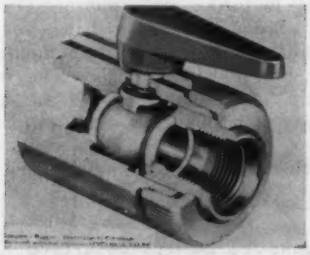
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Spiral wrap hose for use in hydraulic systems

Circle 16 on Readers' Service Card

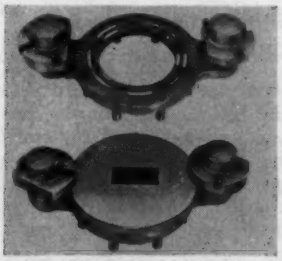
Ideal for hydraulic systems where 1¼-in to 2-in hose sizes are required is this spiral wrap hose. It has a synthetic inner tube with alternating layers of spiral wire wrapping. Segmented fittings have been developed for use with the hose (GEC 430). Aeroquip.



PVC valve requires only a quarter-turn to operate

Circle 17 on Readers' Service Card

Corrosion resistant, this low-torque PVC valve requires only a quarter-turn to operate. It is manufactured in sizes of ¼ through 4-in. Available in socket weld or threaded ends, it features a rugged compact body with external one-end adjustment (GEC 820). Walworth.



Coupling device eliminates nuts-and-bolt method

Circle 18 on Readers' Service Card

A new type of closure on flanges has recently been designed to replace the conventional nuts-and-bolt method. This quick-acting cam makes it possible to connect and disconnect cargo in as little as three seconds (GEC 370). Camlock Flange.



System developed to control "key-stop" terminal loading

Circle 19 on Readers' Service Card

An automated measurement control system has recently been developed for loading fluids at "key-stop" bulk storage terminals. The system includes optional use of a solenoid-activated line block valve. The system is also explosion-proof, insuring safety in hazardous loading areas where flammable vapors are often present. Initial use (GEC 540) will be at petroleum products terminals. Rockwell Manufacturing Co.



Cylinder cleaner provides inexpensive method

Circle 20 on Readers' Service Card

The "Chipper" cylinder cleaner is a recent development providing an inexpensive method of cleaning. It permits the ICC visual inspection and eliminates paint build up which distorts the stamped tare weight. Tipping-up action of the chipper, allows easier cleaning of the neck area (GEC 260). Fine Products Co.

FREE LITERATURE

Bulletin describes burners

Circle 21 on Readers' Service Card

A new bulletin containing complete specifications, selection and sizing information on packaged incinerator burners is now available. These gas-fired burners offer a burner nozzle design that gives improved flame retention, stability, and ground area; plus adjustable



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Free Literature

gas cocks in the pilot gas line, which permit easy adjustment of air-gas ratio to the pilot. (GEC 440). Eclipse Fuel Engineering Co.

Degree day system explained

Circle 22 on Readers' Service Card

Information explaining how to get started on a degree day system is now available. This includes complete printed instructions, sample cards, and an illustrated reprint form BUTANE-PROPANE *News*, plus information on a degree day recorder (GEC 450). Hidy-Brown Recorder Co.

Gas-vent installation

Circle 23 on Readers' Service Card

Corrosion resistance of gas venting materials is explained in a new bulletin. It is third in a series dealing with safe, modern methods of gas vent installation. The bulletin is intended to correct any misconceptions that exist on abilities of double-wall gas vents to withstand corrosion (GEC 840). Gas Vent Institute.

Packaged boilers described

Circle 24 on Readers' Service Card

A new bulletin, No. 21, on gas-fired cast-iron boilers is now available. The bulletin offers a complete presentation of the labor savings and cost advantages of the line. Ratings, dimensions, weights, diagrams, and operational data are included (GEC 420). Hydrotherm, Inc.

LPG advertising brochure

Circle 25 on Readers' Service Card

"The use of Local Advertising in the L.P. Gas Business," has recently been published for the LPG business man. Sections deal with competition, advertising costs and circulation, and creativity (GEC 450). Union Texas Natural Gas Corp.



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See Bulletin 316 for details

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National Petroleum Council offers 56-page report

• Study shows producibility of natural gas liquids is 1,799,600 bbls per day

A COMPREHENSIVE REPORT by the National Petroleum Council on proved discoveries and productive capacity of crude oil, natural gas, and natural gas liquids in the United States can now be obtained from National Petroleum Council, 1625 K Street, N. W. Washington 6, D. C.

The study was made by the council's committee on proved petroleum and natural gas reserves and availability, under the chairmanship of L. F. McCollum, president of Continental Oil Co., in response to requests of the U. S. Department of the Interior.

The committee's 56-page report is the product of the experience and work of over 100 engineers and geologists in the oil and gas industries. The task force for crude oil was headed by Stuart E. Buckley, Humble Oil & Refining Co.; the natural gas and natural gas liquids task force was headed by Ed Parkes, United Gas Corp.

Following are a few highlights of the report:

1. Productive capacity — The productive capacities of crude oil, natural gas liquids and natural gas in the U. S. on Jan. 1, 1960, were estimated to be: Crude Oil at 10,585,000 bbls daily, natural gas liquids at 1,799,600 bbls daily, natural gas at 71,504,000 thousand cu ft daily.

These estimates represent the rates at which oil, gas and natural gas liquids could be produced, on Jan. 1, 1960, from existing fields and wells without regard to such important limitations as lack of surface facilities for handling, processing, storage, or transportation; and without reference to governmental regulations under normal peacetime conditions. They therefore represent potential rather than actual availability.

2. Proved discoveries — The report presents historical tabulations of proved discoveries of crude oil, natural gas, and nat-

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ural gas liquids in the U. S. summarized by PAW* districts. These tabulations do not represent new and original findings by the council committee with respect to remaining U. S. reserves, but in essence are a recasting of known reserves according to the discovery years of the fields to which the reserves are attributed.

Following are the discovery estimates, through 1954, contained in the report and representing the total expected recoveries, including both past production and remaining proved reserves, based upon field size and past performance, as such factors were known on Dec. 31, 1959: crude oil—91,424,672 thousand bbls, natural gas liquids—10,408,958 thousand bbls and natural gas at 419,052,526 million cu ft.

The committee emphasized that periodic estimates of recoverable reserves from the average field usually increase several fold over the estimate made at the end of the original discovery year, and continue to increase from various causes for a great many years. Discoveries in this report, therefore, represent a single set of estimates based on data available at the end of 1959. Thus fields discovered in 1954 have only 5 years' experience, whereas fields discovered prior to 1919 have the benefit of over 40 years' experience in making the 1959 calculations upon which this report was based.

The committee interprets its findings as showing the following:

The estimated proved recovery from newly discovered fields, when estimated at the end of the original discovery year by present industry concepts and methods, represents only a small fraction of the hydrocarbons that will ultimately prove to be recoverable.

The aggregate of all fields discovered, from newly discovered ones to those a century old, represents an enormous base for future additions to reserves through further extensions and revisions. ■

* Petroleum Administration for War.



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Circled so you can find them in this maze of equipment are two of the five J-47 turbojet engines that gulp propane at the rate of 25 gpm each. The resulting hot exhaust gases rocket through a series of ducts (including the insulated one in the foreground) into a bank of J-33 turbojet engines and turbines, eventually exhaust through stacks such as those rising up in the center of the photo and at the left. This construction shot does not show the installation exactly as it is today, since the engines were not completely connected up.

Is there a 2-million-gal. load right under *your* nose?

ROBERT CLAY • Managing Editor

PICTURE THE HUSHED, THROBBING ROAR OF FIVE HEAVILY MUFFLED, GROUND-MOUNTED J-47 TURBOJET ENGINES GUSHING OUT SOME 30,000 HP. Picture each of these five engines gulping down propane at the rate of 25 gpm. Add to that picture seven other assorted exotic pieces of LPG-using equipment—and you get a load that totaled 2-million gal. last year. And that's the kind of LPG consumer The Marquardt Corporation (Van Nuys, Calif.) has been for the last three years.

Marquardt pioneered the ramjet engine. This power plant is unique in that the actual motion of the engine through the air rams air into it, providing the compression essential to its operation. Thus, the ramjet cannot operate — or be tested—without motion relative to its surrounding air. In 1948, Marquardt began testing the ramjet by blowing very large amounts of air at it while it remained static.

Ramjet engine testing methods have become highly sophisticated in the last 13 years. The company now has eight test cells, each having different test capabilities. No longer is it enough to move air around and through the ramjet at high speed. That merely simulates normal ground-level conditions. Test conditions must also include a tremendous range of temperatures and pressures, simulating operations at a wide variety of altitudes and speeds.

Providing the reduced pressures of high altitudes is the job of those five J-47 turbojets mentioned earlier. The exhaust from each is channeled into ducts that feed a pair of J-33 turbojet engines, providing about 3000 hp for each of the two connected J-33 compressors. These 10 J-33 compressors act as exhausters, drawing air out of either of two test cells. Pressures in these cells can be reduced to as little as 1 psi, simulating extreme altitude.

To simulate extreme speed, air and fuel must be heated. To produce this heat, Marquardt has devised a unique assortment of devices with a total input capacity of 680 million Btuh enough to heat 10,000 houses.

With such highly sophisticated test procedures came a pair of unwelcome conditions, "high cost" and "air pollution." Jet propulsion fuels are usually thought of as space age kerosene, but they are not cheap. When five jet engines are run full throttle for several hours a day, the cost can mount in a hurry. And, if you've ever seen a jet airliner take off, you know that one of these things going several hours a day would cause quite an air pollution problem in any neighborhood.

It was to solve these two problems that Marquardt turned to LPG. And solve them it did. Propane's well-known clean-burning qualities immediately did away with the stench and smoke of JP fuels. And in the quantities Marquardt needed, propane proved to cost only about one-third as much as the previously-used JP-4. Thus, the conversion cost was saved in a very short time.

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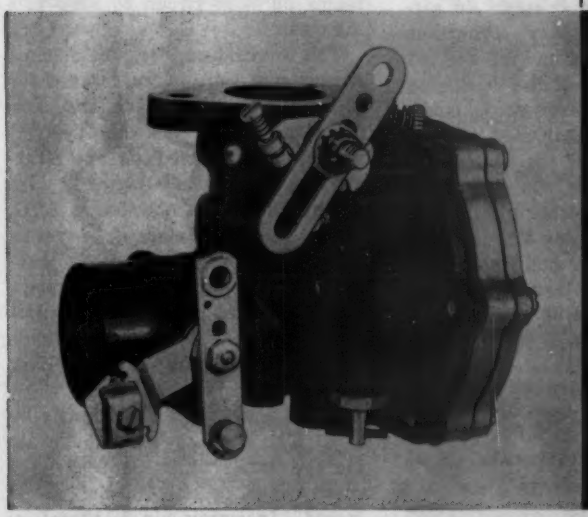
1 ZENITH PRESSURE CARBURETOR

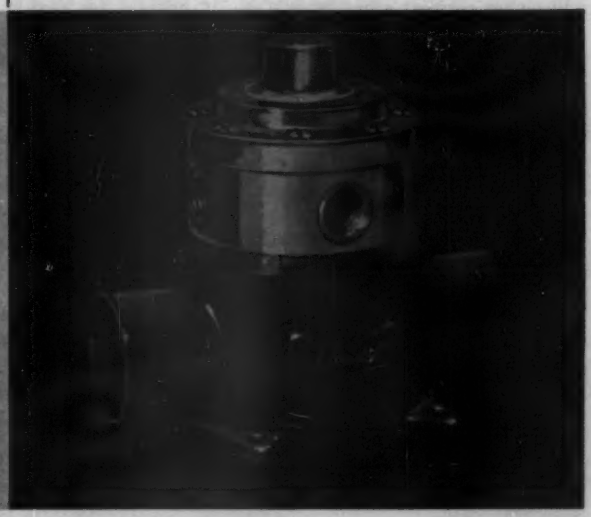
Greater safety and efficiency in fuel control are built into this new Zenith® LP carburetor. In its development, our engineers drew upon their wide experience in other fields of carburetion—particularly aircraft pressure carburetion, where Bendix patents exist. The new LP models offer many advanced features: Both fuel economizer and final regulator are built in. The carburetors are fully balanced, can have fixed or adjustable fuel metering, and are simple to service. Two sizes available: 1″ S.A.E. (Model PC 1-8) and 1¼″ S.A.E. (Model PC 1-10).

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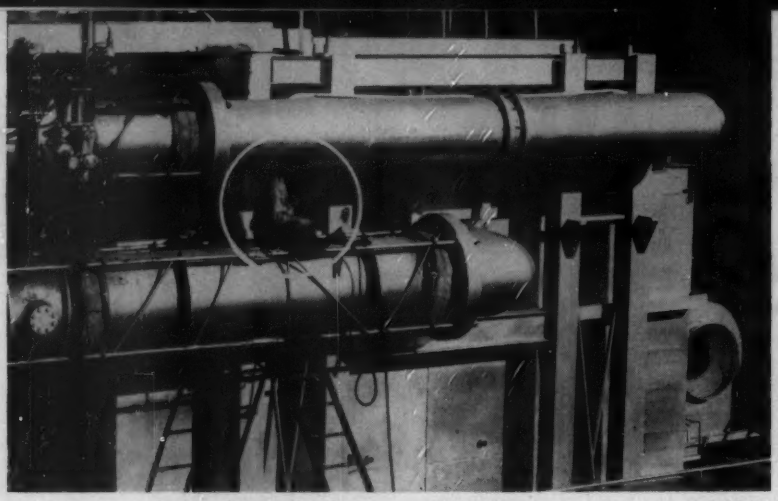


Write for information on Zenith's LP Gas Carburetor School

Zenith Carburetor Division

696 HART AVENUE, DETROIT 14, MICHIGAN

THE Bendix CORPORATION



Here's that giant heat exchanger that burns propane at 20 gpm. It contains 10 12-ft-high steel bottles which are packed with steel slabs. Air circulating inside the bottles picks up heat from both the slabs and the bottles. Note how this unit dwarfs the workman in the center of the photo.

whole fuel system," says a company spokesman. "And over the succeeding three years we have made many more modifications. There have been a lot of problems. Once we used nearly a mile of oscillograph tape in working out a bug."

But beyond that, Marquardt will say no more on the actual conversion. In business to make money like everyone else — the company spent considerable time and money perfecting these conversions and is not about to give away all this know-how. However, it will supply consulting information of a general nature (no specific data) or will either convert a customer's engine or supply a converted unit.

Not much has been revealed about the operation of the J-47's. They use liquid propane, which is supplied via 1-in. pipe, coming up through the floor of the exhauster facility, a roofed-in area closed in on one side. The propane passes through a pair of Annin safety valves and flexible aircraft hose into the engine controls and then into the burning chamber of the turbo jet. The fast-moving exhaust gases from the J-47 are quickly ducted into the intakes of the J-33 engines, which operate completely on these exhaust gases.

These big propane-gulpers are naturally started up only when they're needed. Under normal operating conditions, that's up to three times a day. They run for about an hour each time. Thus, at 25 gpm per engine, the five jet engines can use up to 22,500 gal. of propane per day.

Other pieces of propane fired equipment also use substantial quantities. A heat exchanger which burns 20 gpm is the biggest of four propane-fired devices that produce hot air for test purposes. An aircraft carrier steam generator which uses 11 gpm is one of two propane-fired units producing steam for test purposes. In addition, there is a heater used with an air drier. Many of the design and use details of this equipment are kept confidential, either by the government's choosing or Marquardt's.

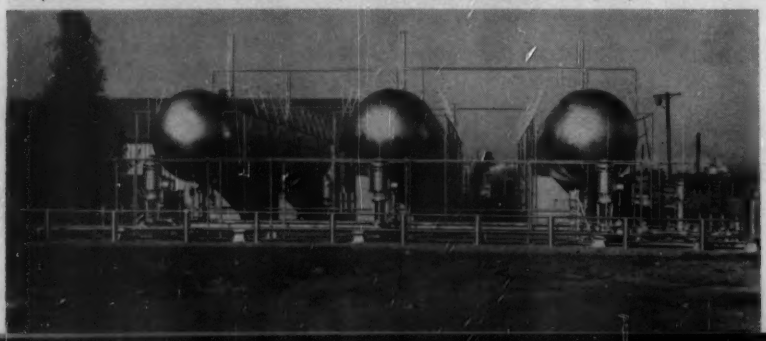
The giant heat exchanger supplies hot air to the largest and newest test cell, a sort of wind tunnel, 80-ft long and 14-ft in diameter. The big heater consists of a pair of giant box-like structures which enclose a total of 10 giant steel bottles. Each bottle is 30 in. in diameter and 12 ft. tall. Inside the bottle, huge steel slabs run from top to bottom, boxing off the center of the bottle (looking down at it from the top), but otherwise providing air circulation space around the slabs. Cold air is forced down through the center and brought up around the sides, where it is warmed by contact with the heat-holding slabs and the bottle, itself. The bottles are heated by eight torch-like vapor burners, each with an orifice about 1 in. in diameter. A low fire is kept going all day, burning 5 gpm, supplied by its own vaporizer. When needed for a test, the gas is turned up, an extra fan kicks in, and the giant is then thermostatically controlled to maintain a given temperature, normally 1250.

In the aero-thermo area, there is a unique small air heater, every bit as fascinating as its giant neighbor. Its full name is the aero-thermo zircon pebble heater. Basically, it consists of a Marquardt-designed burner that heats a metal basket full of zircon balls. After the balls are heated for four or five hours, the flame is turned off and air is flowed over the balls, producing especially clean, very hot air for a ten-minute test. Propane teams up with zircon to keep this air clean.

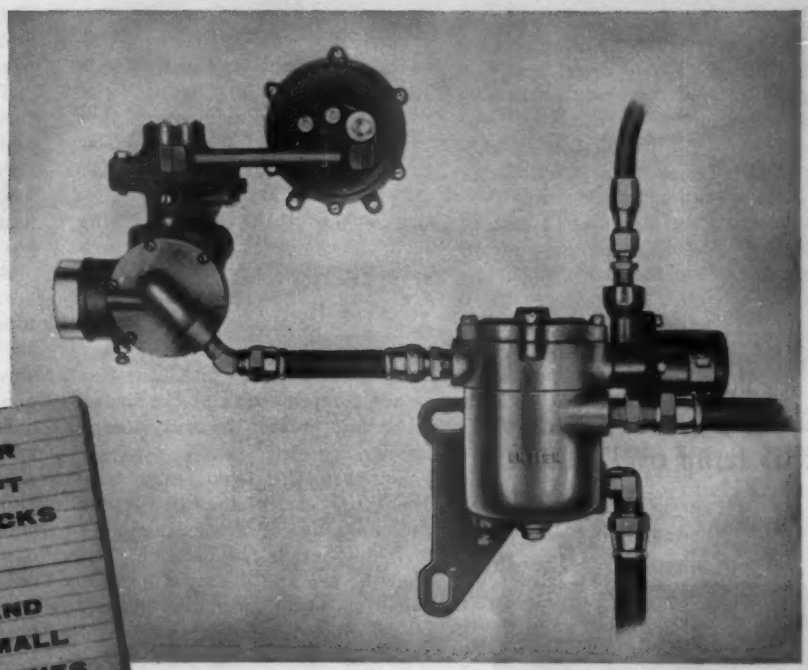
The aircraft carrier steam plant components were manufactured for a medium-sized carrier the contract for which was cancelled. It was first assembled on the Marquardt grounds. Originally intended for oil, it now burns LPG, thanks to "a simple fuel-system conversion." The steam it generates, it should again be stressed, is only for test purposes. This unit also has its own vaporizer, and is also turned up from a 2 gpm "idle," as needed.

The air drier is a new installation. The company's six huge air storage tanks must be ready for rapid usage, so only "clean" air is stored. Incoming air is therefore run through one of a pair of desiccant air driers. While air runs through one drier, propane-supplied heat dries the dessicant in the other. This unit has its own vaporizer, uses about 1 gpm, or 150

"The safest bulk storage facility we've ever seen" is here shown shortly after it was installed, late in 1957. The barb-wire-topped chain link fence shown at the right in this picture has been replaced with an 8-ft concrete block wall. Note the fantastic number of sprinklers above the tanks and the sprinklers on each side of the pumps.



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gal. during its 2½-hr. cycle.

The three remaining propane-burning units include a small steam generator for vaporizing heating fuels in the extreme temperature lab, a similar fuel heater in the fuel components lab, and a hot air heater in the pneumatic building. All three get propane from the same vaporizer and use burners which are actually one part of a turbojet. The burners are about 1 ft in diameter and 4 ft long, and use about 2 gpm.

All of this equipment gets liquid propane from one source via underground piping. That source is—without a doubt—the safest bulk storage installation we've ever seen. The piping, valving, etc., are "all according to Los Angeles City Code," but Marquardt's safety goes far beyond that. There are two reasons for this, both stemming from the nature of the installation. First, because other highly volatile fuels are nearby, the bulk tanks must be protected from possible fires stemming from other sources. Second, the security measures necessary for protection of the installation also protect the bulk storage facility.

For protection from nearby conflagrations, each of the three 30,000 gal. tanks has 30 fire extinguisher sprinkler outlets, 11 on each side, 4 on the top and 4 on the bottom. Some 30 other sprinkler outlets around the pumps and inlet and outlet manifolds bring the total to approximately 120 sprinklers in an area measuring only 120 ft by 75 ft.

For protection of the entire facility, including the bulk storage area, an 8-ft high concrete block wall that runs right beside the bulk plant keeps out prowlers. A guard post at the end of the wall is further insurance.

The area beyond the wall is paved and that's where the LPG trucks line up when its time to deliver. Two trucks can deliver at once, running hoses through a normally-locked steel fire door in the concrete wall.

The storage area, itself, is completely surrounded by a 2-ft-high steel fence made of 2-in. steel pipe longitudinal members welded into 6-in. steel posts set in concrete. This fence also runs along the concrete wall, offering double protection from delivery truck damage.

The delivery trucks unload through 2-in. lines to any one tank or to all simultaneously. Vapor return lines to the truck are 1-in. The tanks are fed from 6-in. inlet headers and feed into 4-in. outlet headers.

All pumps used at the storage area are Johnston deep well turbine pumps. A 5-hp unit is used for unloading trucks. Four pumps, three 150-gpm, 40-hp models and one 30-gpm, 15-hp unit, are available for supplying the installation and are used in any combination, as needed. Should the pumps' dual Durametallic seals fail, a special safety system devised by Marquardt would go into action. An automatic warning would trigger the system, sending oil at high pressure into the leaking seal, instead of letting propane pour out. Another safety device is a Shand & Jurs quick closing valve on the outlet line, near each tank.

The storage system supplies only liquid, and can supply up to 450 gpm. Usage is measured through a flow meter. If a gallonage count is desired for a certain test, a special rotary meter is used. The contents of the tanks are visually checked by a level meter in the side of each unit.

In these propane-powered laboratories, Marquardt has designed and tested important components of many mainstays of our national security. To cite but two examples, Marquardt ramjet engines power the Bomarc ground-to-air missile and Marquardt controls are in the North American Hound Dog missiles carried by SAC B-52's on airborne alert.

This company is — indeed — important to America; and propane is—indeed—important to this company. If you have a defense plant in your area Marquardt's example could be important to you. ■

A reprint of this article can be obtained by writing on company letterhead to the Editor, BUTANE-PROPANE *News*, 198 S. Alvarado St., Los Angeles 57, Cal.

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The "MOBILE MILK HOUSE"...



is powered with LPG, of course. Many times the truck itself (above) must be brought right into the barn in order that a small herd may be milked (below). LPG's carbon-monoxide-free exhaust makes this practice safe—so, in large measure, the fuel has made possible a milk delivery system that is saving the economic lives of many small Ohio dairy farmers.



A BPN Exclusive

IT HAS OFTEN BEEN SAID THAT NECESSITY IS THE MOTHER OF INVENTION. This is certainly the case in the creation of the "Mobile Milk House."

The mobile milk house became necessary when the large dairies in the Cleveland, Ohio, area insisted that all milk deliveries to their plants be made in large bulk transport tank trucks. They would no longer accept milk delivered in 10-gal. cans.

As a result, the farmer was forced to install a modern bulk cooling system. In many cases he had to build a substantial brick or cement block milk house, buy a refrigerating unit, a hot water heater, and heating equipment to keep his investment from freezing. The small dairy farmer was faced with a minimum investment of $6000 and in many cases considerably more. If he was milking 20 or less head, his herd was not producing enough profit to warrant such a large investment. So he was left with two alternatives: to sell his herd and retire from dairy farming, or find some way to transport his product to the dairy properly cooled and in bulk.

At this point, George Dion of East Cleveland offered a solution. He conceived the "Mobile Milk House," a combination milker and bulk transport which replaces the old 10-gal. can system, and permits the farmer to continue selling his milk at a modest cost without investing any additional capital in new equipment.

Dion's company is called Swift-Way Milking System, Inc. The "Mobile Milk House" is a truck unit which stops at dairy farms consisting of about 20 cows or more. The driver, who must also be an experienced herdsman, cleans the cows and attaches automatic milking equipment. This milker serves a 35-gal. stainless steel transfer tank which is on wheels. The milk is tested and weighed, the necessary sample is taken, and the farmer is given a receipt. The estimated cost is about $1.75 per hundredweight. The transfer station is then wheeled near the truck where the milk is pumped through a plastic hose into a 600-gal. vacuum bulk cooler. This cooler can hold the output of about 200 cows. One herdsman driver can make eight or ten stops twice in one day and deliver Grade A, bulk milk to the dairy at the correct temperature.

Dion encountered many problems when he constructed his first unit. One in particular was the danger from carbon monoxide at farms where it was necessary to pull his truck into the barn to service the herd.

Kenneth E. Shutts, sales manager of Framgas Co. of Chagrin Falls, Ohio, heard about Dion's

problems and called on him. Shutts suggested that he convert the truck engine to propane and reduce the carbon monoxide danger to a minimum. He also suggested to Dion that he could operate his light generator refrigeration plant and AUI hot water heater on propane. Shutts was able to show that propane would not only solve his monoxide problem, but would save him time and money in the operation and maintenance of his Mobile Milk House.

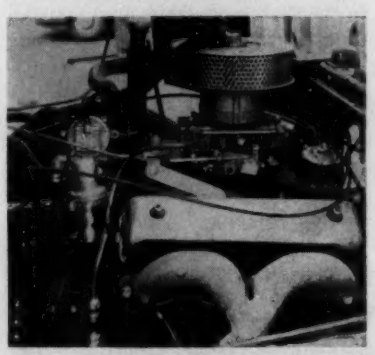
Dion uses a Ford C600 tilt cab truck with a 135-in. wheel base. The cooler and aluminum van which houses the refrigeration power plant and milking equipment are mounted on an 8 x 16 ft 10-gauge steel bed. As a result of Shutts' engineering, the truck, refrigeration unit, and 70-gal. instantaneous hot water heater run on L.P. gas installed by Framgas Co. Dion is well satisfied with the performance of propane on his truck and tests have already shown that it will be a very economical operation.

Another feature which appealed to Mr. Dion was the fact that all Framgas trucks are radio-equipped and can reach his mobile units quickly in case of emergency.

Future plans call for the installation of a bulk tank by Framgas at the Geauga county farm where Dion has established headquarters for Swift-Way Milking Systems.

In the very near future, Dion hopes to have a fleet of these Mobile Milk Houses, which cost about $15,000 each, on the road. Needless to say, he is planning on having each unit completely propane-powered.

George Dion, a native of Massachusetts with a farm background, is a graduate of Ohio University, where he received his Masters Degree in Education. He and Mrs. Dion both taught in the East Cleveland, Ohio, school system until Mr. Dion resigned from teaching to promote his "Mobile Milk House." Mrs. Dion is continuing her teaching career. The Dions are so enthusiastic about their project that they have invested their savings of over $15,000 in it.



Under-the-hood view shows the converted truck engine. LPG is also used to fuel a generator, water heater, and refrigerating unit in the Mobile Milk House.

The truck engine was converted, using an Algas Metr-Flo system. Two L. P. gas fuel tanks were installed. One, with a capacity of 90 gal., fuels the generator, water heater, and refrigerating unit. The other, a 60-gal. tank, was installed for motor fuel. This enabled the operator to have separate control over the truck section, which is subject to Federal and State road taxes, and the production section, which is tax free. ■

A. H. SEEBOLD REPORTS...

"INCREASE DELIVERY RATE 20% WITH CENTURY LP-GAS CARBURETION"

BLAW-KNOX M55
SIX YARD MIXER



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We have a complete conversion and original equipment purchase plan that will eventually make us a complete Century LP-Gas operation."

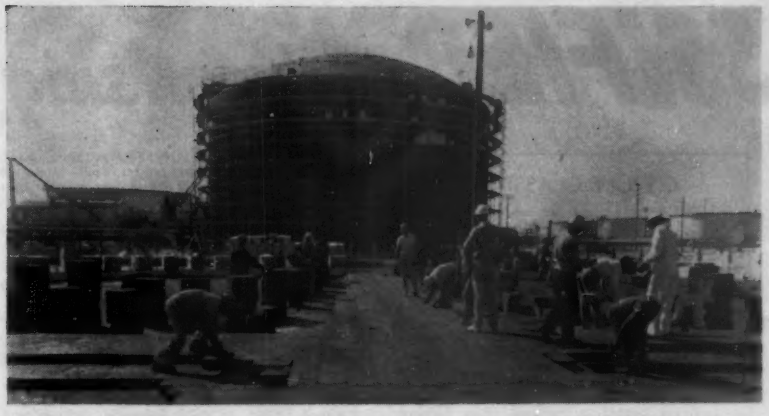
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LP-GAS CARBURETION

CENTURY GAS EQUIPMENT
Marvel-Schebler Products Div.
Borg-Warner Corporation
Decatur, Illinois



Saudi Arabian workmen lay first and second course of Foamglas blocks for base of one of three refrigerated L. P. gas storage tanks being built by Aramco at Ras Tanura. Nearly completed tank is in background.

Work started on world's first refrigerated LPG tanker depot

THE WORLD'S FIRST PLANT specifically designed to make fully refrigerated liquefied petroleum gas available for tanker shipment is now under construction at Ras Tanura, Saudi Arabia.

The $7 million plant, being constructed by the Arabian American Oil Co., will supply 4000 bbls daily of high-purity LPG.

The refrigerated gas will be stored in three 70,000-bbl refrigerated tanks, where the propane will be held at a temperature of —43 deg F, and the butane at 0 deg F. Since outside temperatures go as high as 120 deg F, the tanks are encased in cellular glass insulation.* A high-strength glass foam consisting of countless sealed cells, it is unaffected by most acids and solvents, is impervious to moisture, and has an ultimate compressive strength of over 7 tons. This latter property enabled the designers to incorporate two layers of 2-in.-thick cellular glass blocks in the foundation for the steel bottom of the tank.

Each tank has a diameter of 108 ft and is 49 ft high. A crown rises to a peak 19 ft above the height of the side walls. The steel tank walls were primed with an asphaltic coating and two layers of Foamglas blocks were put on with hot asphalt. Joints were staggered and hot asphalt was used between the blocks as well. The blocks were then coated with an asphalt cutback material in which is embedded fibrous glass cloth. A final coating of asphalt cutback completed the outer finish. A similar procedure is used on the tank roof.

No special vapor barrier was required. The strength of the cellular glass allowed some cost savings by eliminating the need for a second outer steel shell.

After it is purified, the gas coming from the refinery will be liquefied under pressure (250 psi for propane and 100 psi for butane) and stored temporarily.

Pumps will then move it through pipelines to the new plant. Here, two 765 hp compressors will liquefy it through compression and autorefrigeration. It will be compressed to 250 psi, then cooled by condensers. Then it will be delivered via Foamglas-insulated piping to the three huge storage tanks. Here, desired temperatures will be maintained by recirculating vapors back through the compressors, flash towers and condensers.

It is believed that refrigerated tankers to carry the liquefied gases to world markets will be in operation in late 1961. ■

* The material, called "Foamglas," is produced by the Pittsburgh Corning Corp.

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MANAGER WANTED: MUST BE FAMILIAR with all phases of small branch operation including sales, service, and bulk delivery. Prior experience required. Salary and commission. Ideal Gas & Appliance, Nyssa, Oregon. Wilton C. Jackson.

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LPG BULK PLANTS. WE SPECIALIZE in selling petroleum properties throughout Midwest. Have number desirable plants for sale. OLE BRODD, PETROLEUM MARKETERS, 605 Produce Bank Bldg., Minneapolis, Minnesota.

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MANUFACTURERS' REPRESENTATIVES Nationally known manufacturer selling the L. P. Gas industry wants qualified representatives who want to add $1000 to $2000 a year to present income. Write Box 22, BUTANE-PROPANE News, 198 So. Alvarado St., Los Angeles 57, Calif.

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FOR SALE: 1150 GALLON TWIN, full skirt on 1950 Chevrolet, Viking pump, vapor and liquid hoses, no meter. Good condition, $950.00. Call or write Bel-Gas Service, Belding, Michigan.

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1956 IH L-160 BOBTAIL UNIT with single 1080 Butane tank, Neptune Meter. Reconditioned motor, new paint. Ready to work—$1750.00. Southern Butane Gas Co., P. O. Box 83, El Dorado, Arkansas.

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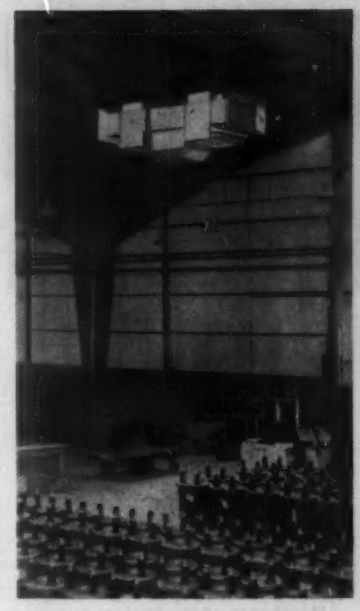
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Twenty-five feet above floor space, three of these heaters sufficiently heat the plant.

Propane heater solves high ceiling problem

A heating problem posed by high ceilings in Central Transformer Corp.'s Arcadia, Fla., plant was solved by use of propane-fired downflow heaters.

Central Transformer manufactures distributor-type electrical transformers.

"The plant consists of three connecting corrugated aluminum buildings with a total of 65,000 sq ft of floor space," said B. A. Newcombe, division manager.

"One of the principal heating problems was posed by our ceilings, which are 30-ft high," he added.

The company specified Reznor downflow heaters, which are designed especially for high-ceiling installation, and may be hung as high as 40 ft above floor level with effective heat distribution.

Three 600,000 Btu heaters were installed 25-ft above floor space in each of three bays. They heat the plant very efficiently during cold spells.

The heater's fans aid air circulation in the summertime.



CALENDAR

All associations are invited to send in the dates of their forthcoming meetings

July 23-25—Kentucky, LPGA Convention —Kentucky Hotel, Louisville, Ky.

August 6-8—New Mexico LPGA Convention—Western Skies Hotel, Albuquerque, N. M.

August 20-22 — Idaho-Nevada-Utah LPGA Convention — Newhouse Hotel, Salt Lake City, Utah.

August 24-26 — Florida LPGA Annual Convention — Hotel Robert Meyer, Jacksonville, Fla.

Sept. 15-17—Iowa LPGA Convention—The New Inn, Lake Okoboji, Iowa.

Sept. 22-24—Wisconsin L.P. Gas Convention — Schwartz Hotel, Elkart Lake, Wis.

Sept. 24-26 — Oklahoma LPGA Annual Convention—The Ramada Inn, Oklahoma City, Okla.

Sept. 25-28—American Welding Society Fall Meeting—Adolphus Hotel, Dallas, Texas.

Oct. 2-4 — AGA Convention — Dallas, Texas.

Oct. 12-13—California Natural Gasoline Association Meeting—Lafayette Hotel, Long Beach, Calif.

Oct. 16-20 — National Safety Council Congress Convention—Chicago, Ill.

Oct. 23-24—Minnesota LPGA Fall Convention—Hotel Lowry, St. Paul, Minn.

Oct. 30-Nov. 1—NFPA Fall Conference —Hotel President, Kansas City, Mo.

Nov. 13-15 — American Petroleum Institute annual meeting—Conrad Hilton, Congress, and Palmer House Hotels, Chicago, Ill.

Dec. 5—Wisconsin LPGA Convention—East Side Businessmen's Association Club House, Madison, Wis.



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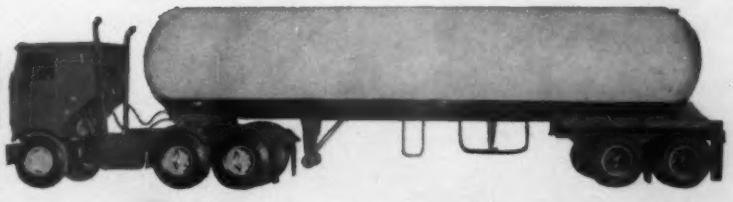
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